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Scientific Publications of Pekka Neittaanmäki  
1978—2016

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# Scientific Publications of Pekka Neittaanmäki 1978—2016

## Abstract

In this report scientific articles of Pekka Neittaanmäki published 1978—2016 are listed according to the Publication Type Classification of the Ministry of Education, Science and Culture, Finland.<sup>1</sup>

## Contents

A	Peer-reviewed scientific articles.....	2
A1	Journal article (refereed), original research.....	2
A2	Review article, Literature review, Systematic review .....	15
A3	Book section, chapters in research books .....	15
A4	Conference proceedings.....	16
B	Non-refereed scientific articles.....	34
B1	Non-refereed journal articles .....	34
B2	Book section.....	34
B3	Non-refereed conference proceedings.....	36
C	Scientific books (monographs) .....	41
C1	Book .....	41
C2	Edited book, conference proceedings or special issue of a journal .....	42
D	Publications intended for professional communities .....	45
D1	Article in a trade journal .....	45
D2	Article in a professional manual or guide or professional information system, textbook material.....	49
D3	Professional conference proceedings.....	49
D4	Published development or research report or study.....	50
D5	Textbook, professional manual or guide, dictionary.....	60
G	Theses.....	60
G1	Doctoral dissertation (monograph).....	60
H	Patents and invention disclosures .....	60
H1	Granted patent .....	60

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<sup>1</sup> <http://www.aka.fi/en/funding/how-to-apply/appendices-required/guidelines-for-list-of-publications/>

## A Peer-reviewed scientific articles

### A1 Journal article (refereed), original research

1. P. Neittaanmäki. Randwertaufgaben zur Plattengleichung. *Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes*, 16:71 pp., 1978. MR 80b:35065.
2. P. Neittaanmäki. Dirichletsche und Neumannsche Randwertaufgaben in der statischen Elastizitätstheorie. *Ann. Acad. Sci. Fenn. Ser. A I Math.*, 5:227–236, 1980. MR 82m:35044.
3. P. Neittaanmäki and R. Picard. Error estimates for the finite element approximation to a Maxwell-type boundary value problem. *Numer. Funct. Anal. Optim.*, 2:267–285, 1980. MR 82b:78006.
4. P. Neittaanmäki and J. Saranen. Finite element approximation of electromagnetic fields in three dimensional space. *Numer. Funct. Anal. Optim.*, 2:487–506, 1980. MR 82b:78005.
5. P. Neittaanmäki and R. Picard. On the finite element method for time-harmonic acoustic boundary value problems. *Comput. Math. Appl.*, 7:127–138, 1981. MR 82g:76031.
6. P. Neittaanmäki and J. Saranen. Fehlerasymptotik für die Finite-Element Approximation einer akustischen Randwertaufgabe. *Z. Angew. Math. Mech.*, 61:T298–T300, 1981.
7. P. Neittaanmäki and J. Saranen. On the finite element approximation for Maxwell's problem in polynomial domains of the plane. *Applicable Anal.*, 12:73–83, 1981. MR 82h:65085.
8. P. Neittaanmäki and J. Saranen. Semi-discrete Galerkin approximation method applied to initial boundary value problems for Maxwell's equations in anisotropic, inhomogeneous media. *Proc. Roy. Soc. Edinburgh Sect. A*, 89:125–133, 1981. MR 82h:65070.
9. P. Neittaanmäki and J. Saranen. Finite element approximation of vector fields given by curl and divergence. *Math. Methods Appl. Sci.*, 3:328–335, 1981. MR 83e:65193.
10. P. Neittaanmäki and J. Saranen. On finite element approximation of the gradient for solution of Poisson equation. *Numer. Math.*, 37:333–337, 1981. MR 82h:65086.
11. P. Neittaanmäki and J. Saranen. A mixed finite element method for the heat flow problem. *BIT*, 21:342–346, 1981. MR 82m:65092.

12. P. Neittaanmäki and R. Picard. On the convergence of the finite element approximation of eigenfrequencies and eigenvectors to Maxwell's boundary value problem. *Ann. Acad. Sci. Fenn. Ser. A I Math.*, 6:255–271, 1981.
13. P. Neittaanmäki. Über die Nichtexistenz der Eigenwerte des Laplace-Operators in einigen unbeschränkten Gebieten. *Z. Angew. Math. Mech.*, 62:T295–T297, 1982.
14. P. Neittaanmäki and J. Saranen. The radiation problem for the Schrödinger operator in some domains with noncompact boundaries. *Soc. Sci. Fenn. Comment. Phys.-Math.*, 52:14 pp., 1982. MR 83m:35041.
15. P. Neittaanmäki and J. Saranen. A modified least squares FE-method for ideal fluid flow problems. *J. Comput. Appl. Math.*, 8:165–170, 1982.
16. P. Neittaanmäki. On the numerical solution of Helmholtz's equation by different finite element methods. *Z. Angew. Math. Mech.*, 63(5):T364–T366, 1983.
17. J. Haslinger and P. Neittaanmäki. Penalty method in design optimization of systems governed by a unilateral boundary value problem. *Ann. Fac. Sci. Toulouse Math. Serie*, 5:199–216, 1983.
18. P. Kuhno, P. Neittaanmäki, and T. Tiihonen. Sorvipöllin keskittämismenetelmien vertailu tietokonesimulointia käyttäen (Comparison of bolt centering methods using computer simulation). *Paperi ja Puu (Paper and Wood)*, 10:626–629, 1983. (In Finnish, English summary).
19. J. Haslinger and P. Neittaanmäki. On the existence of optimal shapes in contact problems. *Numer. Funct. Anal. Optim.*, 7(2–3):107–124, 1984/85.
20. M. Křížek and P. Neittaanmäki. On the validity of Friedrichs' inequalities. *Math. Scand.*, 54:17–26, 1984.
21. J. Haslinger and P. Neittaanmäki. On different finite element methods for approximating the gradient of the solution to the Helmholtz equation. *Comput. Methods Appl. Mech. Engrg.*, 42:131–148, 1984.
22. J. Haslinger and P. Neittaanmäki. Optimal shape design of systems governed by some boundary value problems. *Z. Angew. Math. Mech.*, 64:T279–T281, 1984.
23. P. Neittaanmäki and T. Tiihonen. Mathematical programming methods for an optimal shape design problem. *Z. Angew. Math. Mech.*, 64:T339–T340, 1984.

24. M. Křížek and P. Neittaanmäki. Finite element approximation for a div-rot system with mixed boundary conditions in non-smooth plane domains. *Apl. Mat.*, 29:272–285, 1984.
25. M. Křížek and P. Neittaanmäki. Superconvergence phenomenon in the finite element method arising from averaging gradients. *Numer. Math.*, 45:105–116, 1984.
26. V. Lappalainen, P. Neittaanmäki, and T. Tiihonen. Rinnakkaislaskenta osittaisdifferentiaaliyhtälöiden numeerisessa ratkaisemisessa (Parallel computing in numerical solution procedures for partial differential equations). *Arkhimedes*, 36:73–84, 1984. (In Finnish).
27. M. Křížek and P. Neittaanmäki. Solvability of a first order system in three-dimensional non-smooth domains. *Apl. Mat.*, 30:307–315, 1985.
28. P. Neittaanmäki and T. Tiihonen. Sensitivity analysis for a class of shape control problems. *Z. Angew. Math. Mech.*, 65:T317–T319, 1985.
29. P. Neittaanmäki and K. Ruotsalainen. On the numerical solution of the bifurcation problem for the sine-Gordon equation. *Arab. J. Math.*, 6(1–2):35–62, 1985.
30. J. Haslinger, V. Horák, and P. Neittaanmäki. Shape optimization in contact problems with friction. *Numer. Funct. Anal. Optim.*, 8(5–6):557–587, 1985/86.
31. J. Haslinger, P. Neittaanmäki, and T. Tiihonen. Shape optimization in contact problems based on penalization of the state inequality. *Apl. Mat.*, 31(1):54–77, 1986.
32. P. Neittaanmäki. Computational mechanics in Finland. *IACM-Bulletin*, 2:3–5, 1986.
33. J. Haslinger and P. Neittaanmäki. On optimal shape design of systems governed by mixed Dirichlet–Signorini boundary value problems. *Math. Methods Appl. Sci.*, 8(2):157–181, 1986.
34. P. Neittaanmäki and E. Laitinen. Temperature distribution in continuous casting and its control. *Z. Angew. Math. Mech.*, 66:T388–T390, 1986.
35. M. Křížek and P. Neittaanmäki. Internal FE approximation of spaces of divergence-free functions in three-dimensional domains. *Internat. J. Numer. Methods Fluids*, 6(11):811–817, 1986.
36. S. Palosaari, S. Parviainen, J. Hiironen, J. Reunanen, and P. Neittaanmäki. A random search algorithm for constrained global optimization. *Acta Polytech. Scand. Chem. Tech. Metal Ser.*, 172:45 pp., 1986.

37. J. Haslinger and P. Neittaanmäki. On the existence of optimal shapes in contact problems – perfectly plastic bodies. *Comput. Mech.*, 1(4):293–299, 1986.
38. P. Neittaanmäki and Q. Lin. Acceleration of the convergence in finite difference method by predictor-corrector and splitting extrapolation methods. *J. Comput. Math.*, 5(2):181–190, 1987.
39. M. Křížek and P. Neittaanmäki. On superconvergence techniques. *Acta Appl. Math.*, 9(3):175–198, 1987.
40. M. Křížek and P. Neittaanmäki. On a global superconvergence of the gradient of linear triangular elements. *J. Comput. Appl. Math.*, 18(2):221–233, 1987.
41. J. Haslinger and P. Neittaanmäki. Shape optimization in contact problems. approximation and numerical realization. *RAIRO Modél. Math. Anal. Numér.*, 21(2):269–291, 1987.
42. P. Neittaanmäki and G. F. Roach. Weighted Sobolev spaces and exterior problems for the Helmholtz equation. *Proc. Roy. Soc. London Ser. A*, 410(1839):373–383, 1987.
43. P. Neittaanmäki and K. Saarinen. Multigrid approach for molecular calculations. *Z. Angew. Math. Mech.*, 67:T436–T437, 1987.
44. J. Haslinger, P. Neittaanmäki, and K. Salmenjoki. Sensitivity analysis for some optimal shape design problem. *Z. Angew. Math. Mech.*, 67:T200–T203, 1987.
45. J. Nečas, A. Lehtonen, and P. Neittaanmäki. On the construction of Lusternik–Schnirelmann critical values with application to bifurcation problems. *Appl. Anal.*, 25(4):253–268, 1987.
46. P. Neittaanmäki and D. Tiba. On the approximation of the boundary control in two-phase Stefan-type problems. *Control Cybernet.*, 16(3–4):33–44, 1987.
47. P. Neittaanmäki and D. Tiba. A steepest descent method for the approximation of the boundary control in two-phase Stefan problem. *Mathematica (Cluj)*, 29(2):157–167, 1987.
48. P. Neittaanmäki and D. Tiba. A variational inequality approach to constrained control problems for parabolic equations. *Appl. Math. Optim.*, 17:185–201, 1988.
49. P. Neittaanmäki, J. Sokołowski, and J. P. Zolésio. Optimization of the domain in elliptic variational inequalities. *Appl. Math. Optim.*, 18:85–98, 1988.

50. C. A. Marinov and P. Neittaanmäki. A theory of electrical circuits with resistively coupled distributed structures: Delay time predicting. *IEEE Circuits Systems*, 35:173–183, 1988.
51. J. Haslinger, P. Neittaanmäki, T. Tiihonen, and K. Kaarna. Optimal shape design and unilateral boundary value problems. I. *J. Optimal Control Appl. Methods*, 9:127–144, 1988.
52. J. Haslinger, P. Neittaanmäki, T. Tiihonen, and A. Kaarna. Optimal shape design and unilateral boundary value problems. II. *J. Optimal Control Appl. Methods*, 9:145–163, 1988.
53. E. Laitinen and P. Neittaanmäki. On numerical simulation of the continuous casting process. *J. Engrg. Math.*, 22:335–354, 1988.
54. E. Laitinen and P. Neittaanmäki. On numerical solution of the problem connected with the control of the secondary cooling in the continuous casting process. *Control Theory Adv. Tech.*, 4:285–305, 1988.
55. E. Laitinen and P. Neittaanmäki. Metallin jatkuvavaluprosessin simulointi ja säätö (Simulation and control of the continuous steel casting). *Arkhimedes*, 4:206–220, 1988. (In Finnish).
56. P. Neittaanmäki and K. Salmenjoki. Sensitivity analysis for optimal shape design problems. *Structural Optimization*, 1:241–251, 1989.
57. K. Salmenjoki, P. Neittaanmäki, and G. Arumugam. Optimal shape design of an electromagnet. *Z. Angew. Math. Mech.*, 69:T234–T237, 1989.
58. M. Křížek and P. Neittaanmäki. On  $O(h^4)$ -superconvergence of piecewise bilinear FE-approximations. *Mat. Apl. Comput.*, 8:49–61, 1989.
59. C. Marinov and P. Neittaanmäki. Global delay time for general distributed networks with applications to timing analysis of digital MOS integrated circuits. *COMPEL*, 8:17–37, 1989.
60. M. Křížek and P. Neittaanmäki. On time-harmonic Maxwell equations with nonhomogeneous conductivities: Solvability and FE-approximation. *Apl. Mat.*, 34:480–499, 1989.
61. S. Kaijaluoto, P. Neittaanmäki, and J. Ruhtila. Comparison of different solution algorithms for sparse linear equations arising from flowsheeting problems. *Computers Chem. Engrg.*, 13:433–439, 1989.
62. C. A. Marinov and P. Neittaanmäki. Asymptotical convergence evaluation for a parabolic problem arising in circuit theory. *Z. Angew. Math. Mech.*, 70:344–347, 1990.



63. C. A. Marinov and P. Neittaanmäki. A delay time bound for distributed parameter circuits with bipolar transistors. *Internat. J. Circuit Theory Appl.*, 18:99–106, 1990.
64. E. Laitinen and P. Neittaanmäki. On FEM-based simulation and application to solidification process. *Physica Scripta*, T33:86–90, 1990.
65. X.-C. Tai and P. Neittaanmäki. Parallel finite element splitting-up method for parabolic problems. *Numer. Methods Partial Differential Equations*, 7:209–225, 1991.
66. T. Lu, P. Neittaanmäki, and X.-C. Tai. A parallel splitting up method and its application to Navier–Stokes equations. *Appl. Math. Lett.*, 4:25–29, 1991.
67. G. Moroşanu, C. Marinov, and P. Neittaanmäki. Well-posed nonlinear problems in integrated circuits modeling. *Circuits Systems Signal Process.*, 10:53–69, 1991.
68. P. Neittaanmäki. Computer aided optimal structural design. *Surveys Math. Indust.*, 1(3):173–215, 1991.
69. J. Haslinger, V. Horák, P. Neittaanmäki, and K. Salmenjoki. Identification of critical curves. II. Discretization and numerical realization. *Appl. Math.*, 36(5):380–391, 1991.
70. P. Neittaanmäki and A. Stachurski. Solving some optimal control problems using the barrier penalty function method. *Appl. Math. Optim.*, 25:127–149, 1992.
71. T. Lu, P. Neittaanmäki, and Tai X.-C. A parallel splitting-up method for partial differential equations and its applications to Navier–Stokes equations. *RAIRO Modél. Math. Anal. Numér.*, 26:673–708, 1992.
72. J. Haslinger, P. Neittaanmäki, and K. Salmenjoki. On FE-grid relocation in solving unilateral boundary value problems by FEM. *Appl. Math.*, 37:105–122, 1992.
73. M. Křížek, P. Neittaanmäki, and M. Vondrák. A nontraditional approach for solving the Neumann problem by the finite element method. *Mat. Apl. Comput.*, 11(1):31–40, 1992.
74. J. Haslinger, P. Neittaanmäki, and K. Salmenjoki. Sensitivity analysis for discretized unilateral plane elasticity problem. *Finite Elem. Anal. Des.*, 12:13–25, 1992.
75. P. Neittaanmäki. Design sensitivity analysis for state-constrained structural design problems. *Mech. Structures Mach.*, 20:433–458, 1992.

76. X.-C. Tai and P. Neittaanmäki. Error estimates for numerical identification of distributed parameters. *J. Comput. Math., Suppl. Issue*:66–78, 1992.
77. T. Männikkö, P. Neittaanmäki, and D. Tiba. A rapid method for the identification of the free boundary in two-phase Stefan problems. *IMA J. Numer. Anal.*, 14(3):411–420, 1994.
78. Yu. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Block relaxation methods for algebraic obstacle problems with M-matrices. *East-West J. Numer. Math.*, 2:75–89, 1994.
79. P. Neittaanmäki, S. Repin, and V. Rivkind. Discontinuous finite element approximations for functionals with linear growth. *East-West J. Numer. Math.*, 2(3):211–228, 1994.
80. V. Barbu, P. Neittaanmäki, and A. Niemistö. Approximating optimal control problems governed by variational inequalities. *Numer. Funct. Anal. Optim.*, 15:489–502, 1994.
81. V. Barbu, P. Neittaanmäki, and A. Niemistö. A penalty method for the identification of nonlinear elliptic differential operator. *Numer. Funct. Anal. Optim.*, 15:503–530, 1994.
82. P. Di Barba, A. Kladas, P. Neittaanmäki, M. Rudnicki, and A. Savini. Applications of global optimization strategies to the optimal shape design of a transformer winding. *Adv. Engrg. Softw.*, 19:121–125, 1994.
83. P. Neittaanmäki, V. Rivkind, and G. Seregin. About optimal shape design in fluid dynamics. *J. Optimal Control. Appl. Methods*, 16:143–148, 1995.
84. P. Neittaanmäki and D. Tiba. An embedding of domains approach in free boundary problems and optimal design. *SIAM J. Control Optim.*, 33(5):1587–1602, 1995.
85. P. Neittaanmäki, V. Rivkind, and G. Seregin. A dual finite element approach for stresses of elasto-perfectly plastic bodies. *Math. Comp.*, 64(212):1455–1462, 1995.
86. L. Liu, M. Křížek, and P. Neittaanmäki. Higher order finite element approximation of a quasilinear elliptic boundary value problem of a non-monotone type. *Appl. Math.*, 41(6):467–478, 1996.
87. T. Kärkkäinen, P. Neittaanmäki, and A. Niemistö. Numerical methods for nonlinear inverse problems. *J. Comput. Appl. Math.*, 74:231–244, 1996. TICAM Symposium (Austin, TX, 1995).

88. P. Neittaanmäki, T. Männikkö, and D. Tiba. Optimal control approach to optimal shape design. *Z. Angew. Math. Mech.*, 76(3):203–206, 1996.
89. V. Arnautu and P. Neittaanmäki. Discretization estimates for an elliptic control problem. *Numer. Funct. Anal. Optim.*, 19:431–464, 1998.
90. E. Heikkola, Yu. A. Kuznetsov, P. Neittaanmäki, and J. Toivanen. Fictitious domain methods for the numerical solution of two-dimensional scattering problems. *J. Comput. Phys.*, 145:89–109, 1998.
91. I. Faragó, S. Korotov, and P. Neittaanmäki. Finite element analysis for the heat conduction equation with the third boundary condition. *Annales Univ. Sci. Budapest. Eötvös Sect. Math.*, 41:181–193, 1998.
92. M. Rudnicki, P. Neittaanmäki, and T. Jokinen. Neural network simulation of a pulse magnetiser for magnetising permanent magnets. *COMPEL J.*, 17(6):697–707, 1998.
93. S. Korotov, M. Křížek, and P. Neittaanmäki. On the existence of strongly regular families of triangulations for domains with a piecewise smooth boundary. *Appl. Math.*, 44(1):33–42, 1999.
94. M. Křížek, L. Liu, and P. Neittaanmäki. Post-processing of Gauss–Seidel iterations. *Numer. Linear Algebra Appl.*, 6(2):147–156, 1999. Czech-US Workshop in Iterative Methods and Parallel Computing (Milovy, 1997), Part 2.
95. A. Yu. Kokotov, P. Neittaanmäki, and B. A. Plamenevskii. The Neumann problem for the wave equation in a cone. *Function theory and applications. J. Math. Sci. (New York)*, 102(5):4400–4428, 2000.
96. L. Liu, M. Křížek, and P. Neittaanmäki. Second-order optimality conditions for nondominated solutions of multiobjective programming with  $C^{1,1}$  data. *Appl. Math.*, 45(5):381–397, 2000.
97. W. Liu, P. Neittaanmäki, and D. Tiba. Sur les problèmes d’optimisation structurelle. *C. R. Acad. Sci. Paris Sér. I Math.*, 331(1):101–106, 2000.
98. V. E. Grikurov, M. A. Lyalinov, P. Neittaanmäki, and B. A. Plamenevskii. On surface waves in diffraction gratings. *Math. Methods Appl. Sci.*, 23(17):1513–1535, 2000.
99. S. Korotov, M. Křížek, and P. Neittaanmäki. Weakened acute type condition for tetrahedral triangulations and the discrete maximum principle. *Math. Comp.*, 70(233):107–119, 2001.

100. P. Neittaanmäki and S. I. Repin. A posteriori error estimates for boundary-value problems related to the biharmonic operator. *East-West J. Numer. Math.*, 9(2):157–178, 2001.
101. A. Yu. Kokotov, P. Neittaanmäki, and B. A. Plamenevskii. Problems of diffraction by a cone: Asymptotic behavior of the solutions near the vertex. *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)*, 259(Kraev. Zadachi Mat. Fiz. i Smezh. Vopr. Teor. Funkts. 30):122–144, 297–298, 1999. (In Russian; translation in *J. Math. Sci. (New York)*, 109(5):1894–1910, 2002).
102. A. Yu. Kokotov, P. Neittaanmäki, and B. A. Plamenevskii. On the Neumann problem for hyperbolic systems in a wedge. *Dokl. Akad. Nauk*, 383(5):608–611, 2002. (In Russian).
103. V. E. Grikurov, E. Heikkola, P. Neittaanmäki, and B. A. Plamenevskii. On a method for searching for surface waves in diffraction gratings. *Dokl. Akad. Nauk*, 385(4):465–469, 2002. (In Russian).
104. V. E. Grikurov, E. Heikkola, P. Neittaanmäki, and B. A. Plamenevskii. On computation of scattering matrices and on surface waves in diffraction gratings. *Numer. Math.*, 94(2):269–288, 2003.
105. W. B. Liu, P. Neittaanmäki, and D. Tiba. Existence for shape optimization problems in arbitrary dimension. *SIAM J. Control Optim.*, 41:1440–1454, 2003.
106. S. Korotov, P. Neittaanmäki, and S. Repin. A posteriori error estimation of goal-oriented quantities by the superconvergence patch recovery. *J. Numer. Math.*, 11(1):33–59, 2003.
107. I. Faragó, S. Korotov, and P. Neittaanmäki. Galerkin approximations for the linear parabolic equation with the third boundary condition. *Appl. Math.*, 48(2):111–128, 2003.
108. V. Kalvine and P. Neittaanmäki. Dissipative elliptic problems in domains with cylindrical ends, scattering matrices, and radiation conditions. *J. Math. Sci.*, 120(2):1093–1108, 2004.
109. L. Baskin, V. Grikurov, P. Neittaanmäki, and B. Plamenevskii. Quantum phenomena in the control of electron flows. *Tech. Physics Letters*, 30(8):650–653, 2004.
110. V. O. Kalvine, P. Neittaanmäki, and B. A. Plamenevskii. On accumulations of the point spectrum of elliptic problems in domains with cylindrical ends. *Dokl. Akad. Nauk*, 394(2):586–588, 2004.

111. V. O. Kalvine, P. Neittaanmäki, and B. A. Plamenevskii. Method for computing scattering matrices for general dissipative and self-adjoint elliptic problems in domains with cylindrical ends. *J. Math. Sci. (N.Y.)*, 122(3):3212–3245, 2004.
112. M. Dementieva, P. Neittaanmäki, and V. Zakharov. Time-consistency and the problem of minimal reduction. *Int. J. Math. Game Theory Algebra*, 14(4):329–342, 2004.
113. M. Frolov, P. Neittaanmäki, and S. I. Repin. Guaranteed functional error estimates for the Reissner–Mindlin plate problem. *J. Math. Sci. (N. Y.)*, 132(4):553–561, 2006.
114. L. M. Baskin, P. Neittaanmäki, B. A. Plamenevskii, and A. A. Pozharskii. On electron transport in 3D quantum waveguides of variable cross-sections. *Nanotechnology*, 17:S19–S22, 2006.
115. M. Dementieva, P. Neittaanmäki, and V. Zakharov. Time-consistency and the problem of minimal reduction. *Int. J. Math. Game Theory Algebra*, 15(5):581–594, 2006.
116. E. Gorshkova, A. Mahalov, P. Neittaanmäki, and S. Repin. A posteriori error estimates for viscous flow problems with rotation. *J. Math. Sci. (N. Y.)*, 142(1):1749–1762, 2007.
117. N. Banichuk and P. Neittaanmäki. On structural optimization with incomplete information. *Mech. Based Des. Struct. Mach.*, 35(1):75–95, 2007.
118. A. S. Kravchuk and P. Neittaanmäki. Solution of contact problems using the boundary element method. *Prikl. Mat. Mekh.*, 71(2):329–339, 2007. (In Russian; translation in *J. Appl. Math. Mech.*, 71(2):295–304, 2007).
119. L. M. Baskin, P. Neittaanmäki, B. A. Plamenevsky, and A. A. Pozharsky. Method for reducing the low-temperature thermal conductivity of nanofibers. *Dokl. Phys.*, 53(1):34–38, 2008.
120. V. Zakharov, A. Gan'kova, M. Dementieva, and P. Neittaanmäki. Comparing solutions in joint implementation projects. *Int. Game Theory Rev.*, 10(1):119–128, 2008.
121. P. Neittaanmäki, S. Repin, and P. Turchyn. New a posteriori error indicator in terms of linear functionals for linear elliptic problems. *Russian J. Numer. Anal. Math. Modelling*, 23(1):77–87, 2008.

122. O. Bräysy, P. Nakari, W. Dullaert, and P. Neittaanmäki. An optimization approach for communal home meal delivery service: A case study. *J. Comput. Appl. Math. (JCAM)*, 232(1):46–53, 2009.
123. P. Neittaanmäki, A. Pennanen, and D. Tiba. Fixed domain approaches in shape optimization problems with Dirichlet boundary conditions. *Inverse Problems*, 25(5), 2009. doi: 10.1088/0266-5611/25/5/055003.
124. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. Static instability analysis for travelling membranes and plates interacting with axially moving ideal fluid. *J. Fluids Structures*, 26(2):274–291, 2009. doi: 10.1016/j.jfluidstructs.2009.09.006.
125. I. Anjam, O. Mali, A. Muzalevsky, P. Neittaanmäki, and S. Repin. A posteriori error estimates for a Maxwell type problem. *Russian J. Numer. Anal. Math. Modelling*, 24(5):395–408, 2009.
126. L. Baskin, P. Neittaanmäki, B. Plamenevsky, and O. Sarafanov. Asymptotic theory of resonant tunneling in 3D quantum waveguides of variable cross-section. *SIAM J. Appl. Math.*, 70(5):1542–1566, 2009/10.
127. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. On the instability of an axially moving elastic plate. *Internat. J. Solids Structures*, 47(1):91–99, 2010.
128. P. Neittaanmäki and S. Repin. A posteriori error majorants for approximations of the evolutionary Stokes problem. *J. Numer. Math.*, 18(2):119–134, 2010.
129. V. S. Buslaev, S. B. Levin, P. Neittaanmäki, and T. Ojala. New approach to numerical computation of the eigenfunctions of the continuous spectrum of three-particle Schrödinger operator. I. One-dimensional particles, short-range pair potentials. *J. Phys. A: Math. Theor.*, 43(28), 2010. doi: 10.1088/1751-8113/43/28/285205.
130. A. Averbuch, V. Zheludev, P. Neittaanmäki, and J. Koren. Block based deconvolution algorithm using spline wavelet packets. *J. Math. Imaging Vis.*, 38(3):197–225, 2010. doi: 10.1007/s10851-010-0224-4.
131. L. M. Baskin, P. Neittaanmäki, and B. A. Plamenevsky. Effect of dipole structures on field emission from wide-gap semiconductor emitters. *Tech. Phys.*, 55(12):1791–1794, 2010. doi: 10.1134/S1063784210120145. (Published in Russian in *Zh. Tekhn. Fiz.*, 80(12):86–89, 2010).

132. A. Iqbal, M. Kankaanranta, and P. Neittaanmäki. Experiences and motivations of the young for participation in virtual worlds. *Procedia – Social Behav. Sci.*, 2(2):3190–3197, 2010. doi: 10.1016/j.sbspro.2010.03.488.
133. A. Iqbal, M. Kankaanranta, and P. Neittaanmäki. Engaging learners through virtual worlds. *Procedia – Social Behav. Sci.*, 2(2):3198–3205, 2010. doi: 10.1016/j.sbspro.2010.03.489.
134. A. Iqbal, M. Kankaanranta, and P. Neittaanmäki. Participation of the young ones in virtual worlds: A look at experiences and motivations. *World Journal on Educational Technology*, 3(1):16–27, 2011.
135. A. Averbuch, V. Zheludev, P. Neittaanmäki, P. Warttinen, K. Huoman, and K. Janson. Acoustic detection and classification of river boats. *Appl. Acoustics*, 72(1):22–34, 2011. doi: 10.1016/j.apacoust.2010.09.006.
136. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. Dynamic behaviour of an axially moving plate undergoing small cylindrical deformation submerged in axially flowing ideal fluid. *J. Fluids Structures*, 27(7):986–1005, 2011. doi: 10.1016/j.jfluidstructs.2011.07.004.
137. N. Banichuk, J. Jeronen, M. Kurki, P. Neittaanmäki, T. Saksa, and T. Tuovinen. On the limit velocity and buckling phenomena of axially moving orthotropic membranes and plates. *Internat. J. Solids Structures*, 48(13):2015–2025, 2011. doi: 10.1016/j.ijsolstr.2011.03.010.
138. T. Puurtinen, P. Neittaanmäki, and L. Baskin. Numerical simulation of low temperature thermal conductance of corrugated nanofibers. *Phys. E: Low-dimen. Syst. Nanostruct.*, 44(7–8):1189–1195, 2012. doi: 10.1016/j.physe.2012.01.009.
139. P. Neittaanmäki, B. A. Plamenevskii, and O. V. Sarafanov. Radiation and scattering in domains with periodic waveguides under slow stabilization of characteristics of a medium. *J. Math. Sci.*, 184(3):331–361, 2012.
140. S. Prabhakar, R. V. N. Melnik, P. Neittaanmäki, and T. Tiihonen. Coupled electromechanical effects in wurtzite quantum dots with wetting layers in gate controlled electric fields: The multiband case. *Phys. E: Low-dimen. Syst. Nanostruct.*, 46:97–104, 2012. doi: 10.1016/j.physe.2012.08.024.
141. G. A. Leonov, M. A. Kiseleva, N. V. Kuznetsov, and P. Neittaanmäki. Hidden oscillations in drilling systems: Torsional vibrations. *J. Appl. Nonlin. Dyn.*, 2(1):83–94, 2013. doi: 10.5890/JAND.2012.09.006.
142. L. M. Baskin, M. Kabardov, P. Neittaanmäki, B. A. Plamenevskii, and O. V. Sarafanov. Asymptotic and numerical study of resonant tunneling in two-

- dimensional quantum waveguides of variable cross section. *Comput. Math. Math. Phys.*, 53(11):1664–1683, 2013.
143. P. Neittaanmäki, S. Repin, and J. Valdman. Estimates of deviations from exact solutions for elasticity problems with nonlinear boundary conditions. *Russian J. Numer. Anal. Math. Modelling*, 28(6):597–630, 2013. doi: 10.1515/rnam-2013-0033.
  144. L. Baskin, M. Kabardov, P. Neittaanmäki, and O. Sarafanov. Asymptotic and numerical study of electron flow spin polarization in 2D waveguides of variable cross-section in the presence of magnetic field. *Math. Methods Appl. Sci.*, 37(7):1072–1092, 2014. doi: 10.1002/mma.2889.
  145. N. Banichuk, S. Ivanova, P. Neittaanmäki, and T. Tuovinen. Reliable estimates in the anisotropic heat conduction problems. *J. Uncertainty Anal. Appl.*, 2, 19, 2014. doi: 10.1186/s40467-014-0019-z.
  146. S. Matculevich, P. Neittaanmäki, and S. Repin. A posteriori error estimates for time-dependent reaction-diffusion problems based on the Payne-Weinberger inequality. *Discrete Contin. Dyn. Syst.*, 35(6):2659–2677, 2015. doi: 10.3934/dcds.2015.35.2659.
  147. V. Zheludev, I. Pölönen, N. Neittaanmäki-Perttu, A. Averbuch, P. Neittaanmäki, M. Grönroos, and H. Saari. Delineation of malignant skin tumors by hyperspectral imaging using diffusion maps dimensionality reduction. *Biomed. Signal Process. Control*, 16:48–60, 2015. doi: 10.1016/j.bspc.2014.10.010.
  148. C. Watanabe, K. Naveed, and P. Neittaanmäki. Dependency on un-captured GDP as a source of resilience beyond economic value in countries with advanced ICT infrastructure: Similarities and disparities between Finland and Singapore. *Tech. Soc.*, 42:104–122, 2015.
  149. P. Neittaanmäki and S. Repin. A posteriori error identities for nonlinear variational problems. *Ann. Acad. Rom. Sci. Ser. Math. Appl.*, 7(1):157–172, 2015.
  150. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Periodic spline-based frames for image restoration. *Inverse Problems Imaging*, 9(3):661–707, 2015. doi: 10.3934/ipi.2015.9.661.
  151. C. Watanabe, K. Naveed, P. Neittaanmäki, and Y. Tou. Operationalization of un-captured GDP: Innovation stream under new global mega-trends. *Tech. Soc.*, 45:58–77, 2016. doi: 10.1016/j.techsoc.2016.02.008.



152. C. Watanabe, K. Naveed, and P. Neittaanmäki. Co-evolution of three megatrends nurtures un-captured GDP – Uber’s ride-sharing revolution. *Tech. Soc.*, 46:164–185, 2016. doi:10.1016/j.techsoc.2016.06.004.

## A2 Review article, Literature review, Systematic review

1. P. Neittaanmäki and D. Tiba. Fixed domain approaches in shape optimization problems. *Inverse Problems*, 28(9), 2012. doi:10.1088/0266-5611/28/9/093001.

## A3 Book section, chapters in research books

1. J. Leskinen, F. Neri, and P. Neittaanmäki. Memetic variation local search vs. life-time learning in electrical impedance tomography. In *Applications of Evolutionary Computing*, volume 5484 of *Lecture Notes in Computer Science*, pages 615–624. Springer, Berlin, 2009.
2. R. Kuoremäki, K. Ahde, A. Heinonen, J. Multanen, and P. Neittaanmäki. Feasibility of mobile health for rehabilitation – pilot study in Finland. In M. Jordanova and F. Lievens, editors, *Global Telemedicine and eHealth Updates: Knowledge Resources*, Vol. 5, 2012, pages 507–511. International Society for Telemedicine & eHealth (ISfTeH), Grimbergen, 2012.
3. S. Matculevich, P. Neittaanmäki, and S. Repin. Guaranteed error bounds for a class of Picard-Lindelöf iteration methods. In S. Repin, T. Tiihonen, and T. Tuovinen, editors, *Numerical Methods for Differential Equations, Optimization, and Technological Problems*, volume 27 of *Computational Methods in Applied Sciences*, pages 175–189. Springer, Berlin, 2013.
4. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Inversion of the heat equation by a block based algorithm using spline wavelet packets. In S. Repin, T. Tiihonen, and T. Tuovinen, editors, *Numerical Methods for Differential Equations, Optimization, and Technological Problems*, volume 27 of *Computational Methods in Applied Sciences*, pages 219–236. Springer, Berlin, 2013.
5. P. Neittaanmäki and S. Repin. Two-sided guaranteed estimates of the cost functional for optimal control problems with elliptic state equations. In R. Hoppe, editor, *Optimization with PDE Constraints: ESF Networking Program ‘OPTPDE’*, volume 101 of *Lecture Notes in Computational Science and Engineering*, pages 325–342. Springer, Berlin, 2014.
6. I. Anjam, O. Mali, P. Neittaanmäki, and S. Repin. A unified approach to measuring accuracy of error indicators. In W. Fitzgibbon, Y. Kuznetsov, P.

Neittaanmäki, and O. Pironneau, editors, *Modeling, Simulation and Optimization for Science and Technology*, volume 34 of *Computational Methods in Applied Sciences*, pages 1–22. Springer, Dordrecht, 2014. doi: 10.1007/978-94-017-9054-3\_1.

7. G. Wolf, A. Averbuch, and P. Neittaanmäki. Parameter rating by diffusion gradient. In W. Fitzgibbon, Y. Kuznetsov, P. Neittaanmäki, and O. Pironneau, editors, *Modeling, Simulation and Optimization for Science and Technology*, volume 34 of *Computational Methods in Applied Sciences*, pages 225–248. Springer, Dordrecht, 2014. doi:10.1007/978-94-017-9054-3\_13.
8. M. Kiseleva, N. Kuznetsov, G. Leonov, and P. Neittaanmäki. Drilling systems: Stability and hidden oscillations. In T. Machado, D. Baleanu, and A. Luo, editors, *Discontinuity and Complexity in Nonlinear Physical Systems*, volume 6 of *Nonlinear Systems and Complexity*, pages 287–304. Springer, 2014. doi: 10.1007/978-3-319-01411-1\_15.
9. N. Zaidenberg, P. Neittaanmäki, M. Kiperberg, and A. Resh. Trusted computing and DRM. In M. Lehto and P. Neittaanmäki, editors, *Cyber Security: Analytics, Technology and Automation*, volume 78 of *Intelligent Systems, Control and Automation: Science and Engineering*, pages 205–212. Springer, Dordrecht, 2015. doi: 10.1007/978-3-319-18302-2\_13.
10. N. Banichuk, A. Barsuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. On bifurcation analysis of implicitly given functionals in the theory of elastic stability. In P. Neittaanmäki, S. Repin, and T. Tuovinen, editors, *Mathematical Modeling and Optimization of Complex Structures*, volume 40 of *Computational Methods in Applied Sciences*, pages 175–188. Springer, Dordrecht, 2016. doi: 10.1007/978-3-319-23564-6\_11.

#### A4 Conference proceedings

1. J. Haslinger and P. Neittaanmäki. On the method of penalization in design optimization of systems governed by some unilateral boundary value problems. In K. H. Hoffmann and W. Krabs, editors, *Optimal Control of Partial Differential Equations (Oberwolfach, 1982)*, number 68 in *Internat. Schriftenreihe Numer. Math.*, pages 110–126, Basel, 1984. Birkhäuser.
2. P. Neittaanmäki and M. Křížek. Superconvergence of the finite element schemes arising from the use of averaged gradients. In I. Babuška and O. C. Zienkiewicz, editors, *Proc. of Int. Conf. on Accuracy Estimates and Adaptive Refinements in Finite Element Computations (Lisbon, 1984)*, pages 169–178, 1984.

3. P. Neittaanmäki and M. Křížek. Conforming FE-method for obtaining the gradient of a solution to the poisson equation. In W. Hackbusch, editor, *Efficient Solutions of Elliptic Systems* (Kiel, 1984), number 10 in *Notes Numer. Fluid Mech.*, pages 74–86, Braunschweig, 1984. Vieweg.
4. P. Neittaanmäki and D. Tiba. On the finite element approximation of the boundary control for two-phase Stefan problems. In A. Bensoussan and J. L. Lions, editors, *Analysis and Optimization of Systems* (Nice, 1984), Part 1, number 62 in *Lecture Notes in Control and Inform. Sci.*, pages 356–370, Berlin, 1984. Springer.
5. P. Neittaanmäki and D. Tiba. On the approximation of the boundary control of the two-phase Stefan problem. In *Proc. of 23rd IEEE Conference on Decision and Control* (Las Vegas, NV, 1984), pages 1705–1708. IEEE, 1984.
6. J. Haslinger, P. Neittaanmäki, and T. Tiihonen. On optimal shape design of an elastic body on a rigid foundation. In J. R. Whiteman, editor, *The Mathematics of Finite Elements and Applications* (Uxbridge, 1984), V, pages 555–562, London, 1985. Academic Press.
7. P. Neittaanmäki and T. Tiihonen. Sensitivity analysis for some control problems. In *Proc. of International Conference on Numerical Methods and Applications* (Sofia, 1984), pages 451–458, 1985.
8. P. Neittaanmäki and K. Ruotsalainen. On the finite element approximation of a bifurcation problem for sine-Gordon-type equation. In *Proc. of the 10th International Conference on Nonlinear Oscillations* (Varna, 1984), pages 698–701, Varna, 1985. Publishing House of the Bulgarian Acad. Sci.
9. J. Haslinger and P. Neittaanmäki. Shape optimization of an elastic body in contact with rigid foundation. In C. A. Brebbia, editor, *Variational Methods in Engineering* (Southampton, 1985), pages 6–31–6–40, Berlin, 1985. Springer.
10. P. Neittaanmäki. On the control of cooling during continuous casting. In R. W. Levis and K. Morgan, editors, *Numerical Methods in Thermal Problems* (Swansea, 1985), Vol. 1, pages 240–250. Pineridge Press, 1985.
11. L. Holappa, E. Laitinen, S. Louhenkilpi, and P. Neittaanmäki. Optimization of the secondary cooling in the continuous casting of steel billets. In *Proceedings International Symposium on the Continuous Casting of Steel Billets* (Vancouver, 1985), pages 242–259, Montreal, 1985. Metallurgical Society of CIM and Canadian Institute of Mining and Metallurgy.
12. C. A. Marinov and P. Neittaanmäki. Delay time predicting for distributed parameters circuits. In *Proc. of 6th Internat. Conf. on Control Systems and*

- Computer Science (Bucharest, 1985), pages 100–104, Bucharest, 1985. Polytechnical Institute of Bucharest, Dept. of Control and Computers.
13. P. Koikkalainen, E. Laitinen, S. Louhenkilpi, P. Neittaanmäki, and L. Holappa. FE-modelling of continuous casting problem. In *Computational Mechanics '86: Theory and Applications* (Tokyo, 1986), Vol. 1, 2, pages III 29–III 35, Tokyo, 1986. Springer.
  14. J. Haslinger and P. Neittaanmäki. Structural optimization in elastic perfectly plastic punch problem. In *Computational Mechanics '86: Theory and Applications* (Tokyo, 1986), Vol. 1, 2, pages X77–X81, Tokyo, 1986. Springer.
  15. C. A. Marinov, P. Neittaanmäki, and V. Hara. Signal delay in general distributed networks. In *Proc. of the 30th Conference on Electronics, Telecommunications, Automation and Nuclear Engineering (ETAN, Herceg-Novi, 1986)*, Vol. III, pages 35–43, Beograd, 1986.
  16. P. Neittaanmäki. On the optimal cooling of steel during continuous casting. In *Proc. of 12th IFIP Conference on System Modelling and Optimization*, number 84 in *Lecture Notes in Control and Inform. Sci.*, pages 637–646. Springer, 1986.
  17. C. A. Marinov and P. Neittaanmäki. Delay time for general distributed networks with application to timing analysis of digital MOS integrated circuits. In K. Board and D. R. J. Owen, editors, *Proc. of Simulation of Semiconductor Devices and Processes* (Swansea, 1986), pages 322–336, Swansea, 1986. Pineridge Press.
  18. P. Koikkalainen, N. Asano, and P. Neittaanmäki. Numerical modelling of material properties in mushy zone. In *Proc. of JSME Contr. of Strength of Materials*, No 860–10,11, 1986, Kyoto. JSME, 1986. (In Japanese).
  19. J. Haslinger, P. Neittaanmäki, and T. Tiihonen. Shape optimization in contact problems. 1. Design of an elastic body. 2. Design of an elastic perfectly plastic body. In A. Bensoussan and J.-L. Lions, editors, *Analysis and Optimization of Systems* (Antibes, 1986), number 83 in *Lecture Notes in Control and Inform. Sci.*, pages 29–39, Berlin, 1986. Springer.
  20. P. Neittaanmäki and M. Křížek. Post-processing of a finite element scheme with linear elements. In W. Hackbusch and K. Witsch, editors, *Numerical Techniques in Continuum Mechanics* (Kiel 1986), number 16 in *Notes on Numerical Fluid Mechanics*, pages 69–83, Brawschweg, 1987. F. Vieweg.
  21. J. Haslinger, P. Neittaanmäki, and D. Tiba. On state constrained optimal shape design problems. In K. H. Hoffmann and W. Krabs, editors, *Optimal*

- Control of Partial Differential Equations II: Theory and Applications (Oberwolfach, 1986), number 78 in ISNM, pages 109–122, Basel, 1987. Birkhäuser.
22. P. Neittaanmäki. On the control of the secondary cooling in the continuous casting process. In K. H. Hoffmann and W. Krabs, editors, *Optimal Control of Partial Differential Equations II: Theory and Applications* (Oberwolfach, 1986), number 78 in ISNM, pages 161–177, Basel, 1987. Birkhäuser.
  23. I. Lasiecka, J. Sokolowski, and P. Neittaanmäki. Finite element approximations of the wave equation with Dirichlet boundary data defined on a bounded domain in  $\mathbb{R}^2$ . In F. Kappel, K. Kunisch, and W. Schappacher, editors, *Proc. of Internat. Conf. on Distributed Parameter Systems* (Vorau, 1986), number 102 in *Control & Inf. Sci.*, pages 216–233. Springer, 1987.
  24. C. A. Marinov and P. Neittaanmäki. Asymptotic properties for distributed networks. In *Proc. of 7th Internat. Conf. on Control Systems and Computer Science* (Bucharest, 1987), Vol. I, pages 313–318. Polytech. Inst. of Bucharest, 1987.
  25. P. Neittaanmäki, V. Hara, and C.A. Marinov. Numerical approach for signal delay in general distributed networks. In J. J. Miller, editor, *Numerical Analysis of Semiconductor Devices and Integrated Circuits (NASECODE V, Dublin, 1987)*, number 10 in *Boole Press Conf. Ser.*, pages 307–312, Dún Laoghaire, 1987. Boole.
  26. J. Haslinger and P. Neittaanmäki. On the design of the optimal covering of an obstacle. In J. P. Zolesio, editor, *Boundary Control and Boundary Variations* (Nice, 1986), number 100 in *Lecture Notes in Comput. Sci.*, pages 192–211, Berlin, 1988. Springer.
  27. J. Haslinger, P. Neittaanmäki, and K. Salmenjoki. On optimal mesh design for FEM in unilateral boundary value problems. In J. R. Whiteman, editor, *The Mathematics of Finite Elements and Applications VI* (Uxbridge, 1987), pages 103–113, London, 1988. Academic Press.
  28. P. Koikkalainen and P. Neittaanmäki. A model for carbon macrosegregation. In S. N. Atluri and G. Yagawa, editors, *Proc. of the International Conference on Computational Engineering Science* (Atlanta, GA, 1988), pages 18i1–18i2. Springer, 1988.
  29. P. Neittaanmäki, V. Hara, and C. A. Marinov. Numerical approach for signal delay in general distributed networks. In *Proc. of IEEE International*

- Symposium on Circuits and Systems (Helsinki, 1988), Vol. 2, pages 1353–1358, 1988.
30. E. Laitinen, T. Männikkö, P. Neittaanmäki, and S. Louhenkilpi. On the real-time control of the continuous casting process. In *Heat Transfer in Phase-Change Problems, Extended Abstracts of the Eurotherm Seminar 6* (Delft, 1988), pages 40–42. Delft University of Technology, 1988.
  31. P. Neittaanmäki and M. Křížek. On  $O(h^4)$ -superconvergence of piecewise bilinear FE-approximations. In I. Marek, editor, *Proc. of the Second International Symposium on Numerical Analysis* (Prague, 1987), number 107 in *Teubner-Texte Math.*, pages 250–255, Leipzig, 1988. Teubner.
  32. J. Haslinger and P. Neittaanmäki. Optimal shape design in contact problems of elasticity. In F. Kuhnert and B. Silbermann, editors, *Proc. of the 9th Conference on Problems and Methods in Mathematical Physics* (Karl-Marx-Stadt, 1988), number 111 in *Teubner-Texte Math.*, pages 84–93, Leipzig, 1989. Teubner.
  33. P. Neittaanmäki, D. Tiba, and R. Mäkinen. A variational inequality approach to the problem of the design of the optimal covering of an obstacle. In A. Bermúdez, editor, *Control of Partial Differential Equations* (Santiago de Compostela, 1987), number 114 in *Lecture Notes in Control and Inform. Sci.*, pages 213–224, Berlin, 1989. Springer.
  34. P. Neittaanmäki. Optimal shape design in contact problems. In H. A. Eschenauer and G. Thierauf, editors, *Discretization methods and structural optimization – Procedures and applications. Proc. of a GAMM-seminar* (Siegen, FRG, 1988), number 42 in *Lecture Notes in Engineering*, pages 247–254, Berlin, 1989. Springer.
  35. P. Neittaanmäki and T. Seidman. Optimal solutions for a free boundary problem for crystal growth. In F. Kappel, K. Kunich, and W. Schappacher, editors, *Control and Estimation of Distributed Parameter System* (Vorau, 1988), number 91 in *Internat. Ser. Numer. Math.*, pages 323–334, Basel, 1989. Birkhäuser.
  36. T. Männikkö and P. Neittaanmäki. On the real-time control of the secondary cooling in the continuous casting process. In *Proc. of the 17th IASTED International Symposium on Simulation and Modelling* (Lugano, 1989), pages 52–55, Zürich, 1989. Acta Press.
  37. T. Männikkö, E. Laitinen, and P. Neittaanmäki. Real-time simulator for the continuous casting process. In R. W. Lewis and K. Morgan, editors, *Proc. of*

- the 6th International Conference on Numerical Methods in Thermal Problems, Vol VI, Part 2, pages 309–319, Swansea, 1989. Pineridge Press.
38. C. A. Marinov, P. Neittaanmäki, and V. Hara. A consistent model for the wiring delay of the MOS inverter. In Proc. of European Conference on Circuit Theory and Design (ECCTD), number 308 in Conference Publication, pages 89–93, 1989.
  39. G. Moroşanu, C. A. Marinov, and P. Neittaanmäki. Well-posed nonlinear problems in the theory of electrical networks with distributed and lumped parameters. In Proc. of the 17th IASTED International Symposium on Simulation and Modelling (Lugano, 1989), pages 345–348, Zürich, 1989. Acta Press.
  40. K. Salmenjoki and P. Neittaanmäki. Comparison of various techniques for shape design sensitivity analysis. In C. A. Brebbia and S. Hernandez, editors, Proc. of the 1st International Conference on Computer Aided Optimum Design of Structures (Southampton, 1989), pages 367–377, Southampton, 1989. Computational Mechanical Publications.
  41. X.-C. Tai, P. Neittaanmäki, and Q. Lin. A parallel FE-splitting-up method for solving a class of parabolic partial differential equations. In Proc. of Symposium of Scientific Software (Peking), page 12 p., 1989.
  42. D. Tiba, R. Mäkinen, P. Neittaanmäki, and T. Tiihonen. A boundary control approach to an optimal shape design problem. In M. Amouroux and A. El Jai, editors, Control of Distributed Parameter Systems (Perpignan, 1989), pages 415–418, Oxford, 1989. Pergamon Press.
  43. P. Neittaanmäki. On the methods for optimal shape design. In J. Manley, S. McKee, and D. H. Owens, editors, Proc. of the Third European Conference on Mathematics in Industry (Glasgow, 1988), number 5 in European Consort. Math. Indust., pages 453–459, Stuttgart, 1990. Teubner.
  44. E. Laitinen and P. Neittaanmäki. On the real-time simulation and control of continuous casting process. In J. Manley, S. McKee, and D. H. Owens, editors, Proc. of the Third European Conference on Mathematics in Industry (Glasgow, 1988), number 5 in European Consort. Math. Indust., pages 401–408, Stuttgart, 1990. Teubner.
  45. P. Neittaanmäki and A. Stachurski. Solving some optimal control problems using the barrier penalty function method. In H. J. Sebastian and K. Tammer, editors, System Modelling and Optimization (Leipzig, 1989), number 143 in

- Lecture Notes in Control and Inform. Sci., pages 358–367, Berlin, 1990. Springer.
46. T. Männikkö, E. Laitinen, and P. Neittaanmäki. Real-time simulation and control system for the continuous casting process. In H. J. Sebastian and K. Tammer, editors, *System Modelling and Optimization* (Leipzig, 1989), number 143 in *Lecture Notes in Control and Inform. Sci.*, pages 809–817, Berlin, 1990. Springer.
  47. P. Neittaanmäki. On the optimal shape design problems. In K.-H. Hoffman and J. Sprekels, editors, *Free Boundary Problems: Theory and Applications* (Irsee, 1987), Vol. I, number 185 in *Pitman Res. Notes Math. Ser.*, pages 166–182, Harlow, 1990. Longman Sci. Tech.
  48. J. Haslinger and P. Neittaanmäki. On one identification problem in linear elasticity. In K.-H. Hoffmann and J. Sprekels, editors, *Free Boundary Value Problems* (Oberwolfach, 1989), number 95 in *Internat. Ser. Numer. Math.*, pages 66–84, Basel, 1990. Birkhäuser.
  49. P. Neittaanmäki, D. Tiba, and R. Mäkinen. Exact controllability for elliptic systems with applications to optimal shape design. In J. P. Zolesio, editor, *Proc. of Nice IFIP-meeting*. Springer, 1990.
  50. M. Mäkelä and P. Neittaanmäki. Nonsmooth optimization in optimal shape design. In G. Feichtinger, R. F. Hartl, W. H. Janko, W. E. Katzenburg, and A. Stepan, editors, *Proc. of the XV Symposium on Operations Research* (Vienna, 1990), number 64 in *Methods of Operation Research*, pages 95–104, Frankfurth am Main, 1991. Anton Hain.
  51. E. Laitinen, S. Louhenkilpi, T. Männikkö, and P. Neittaanmäki. Automatic secondary cooling control for the continuous casting process of steel. In H. J. Wacker and W. Zulehner, editors, *Proc. of the Fourth ECMI conference*, pages 109–121, 1991.
  52. D. Tiba, P. Neittaanmäki, and R. Mäkinen. Controllability-type properties for elliptic systems and applications. In F. Kappel and K. Kunisch, editors, *Estimation and Control of Distributed Parameter Systems* (Vorau, 1990), number 100 in *Internat. Ser. Numer. Math.*, pages 341–353, Basel, 1991. Birkhäuser.
  53. X.-C. Tai and P. Neittaanmäki. On the numerical solution of the distributed parameter identification problem. In F. Kappel and K. Kunisch, editors, *Estimation and Control of Distributed Parameter Systems* (Vorau, 1990),



- number 100 in *Internat. Ser. Numer. Math.*, pages 317–330, Basel, 1991. Birkhäuser.
54. P. Neittaanmäki. On the control of the domain in variational inequalities. In V. Barbu, editor, *Differential Equations and Control Theory (Iași, 1990)*, number 250 in *Pitman Res. Notes Math. Ser.*, pages 228–247, Harlow, 1991. Longman Sci. Tech.
  55. X.-C. Tai and P. Neittaanmäki. A linear approach for the nonlinear distributed parameter identification problem. In *Numerical Methods for Free Boundary Problems (Jyväskylä, 1990)*, pages 401–411, Basel, 1991. Birkhäuser.
  56. P. Neittaanmäki and D. Tiba. Optimal control for state constrained two-phase Stefan problems. In *Numerical Methods for Free Bou(Jyväskylä, 1990)*, pages 309–316, Basel, 1991. Birkhäuser.
  57. S. Jensen, E. Laitinen, P. Neittaanmäki, and T. Seidman. Computational stability of an initially radial solution of a growth/dissolution problem in a nonradial implementation. In *Numerical Methods for Free Boundary Problems (Jyväskylä, 1990)*, pages 191–201, Basel, 1991. Birkhäuser.
  58. D. Tiba, P. Neittaanmäki, and R. Mäkinen. A fixed domain approach in an optimal shape design problem. In *Proc. of 13th IMACS World Congress on Computation and Applied Mathematics (Dublin, 1991)*, pages 1658–1660, Dublin, 1991. Criterion Press.
  59. P. Neittaanmäki and C. A. Marinov. Bounds for the solution of a system of parabolic equations arising in circuit theory. In *Proc. of 13th IMACS World Congress on Computation and Applied Mathematics (Dublin, 1991)*, pages 1656–1657, Dublin, 1991. Criterion Press.
  60. Yu. Kuznetsov and P. Neittaanmäki. Overlapping domain decomposition method for a unilateral boundary value problem. In *Proc. of 13th IMACS World Congress on Computation and Applied Mathematics (Dublin, 1991)*, pages 1671–1673, Dublin, 1991. Criterion Press.
  61. C. A. Marinov, P. Neittaanmäki, and J.-P. Santanen. Both sided estimates for distributed structures arising in MOS interconnections. In E. Lindberg, editor, *Proc. of 10th European Conference on Circuit Theory and Design (ECCTD-91, Copenhagen)*, pages 543–549, 1991.
  62. R. Mäkinen, P. Neittaanmäki, and D. Tiba. On a fixed domain approach for a shape optimization problem. In W. F. Ames and P. J. van der Houwen, editors, *Computational and Applied Mathematics II: Differential Equations (Dublin, 1991)*, pages 317–326, Amsterdam, 1992. North-Holland.

63. A. Marinov, P. Neittaanmäki, and J.-P. Santanen. Bounds for the solution of a system of parabolic equations arising in circuit theory. In W. F. Ames and P. J. van der Houven, editors, *Computational and Applied Mathematics II: Differential Equations* (Dublin, 1991), pages 185–192, Amsterdam, 1992. North-Holland.
64. Yu. Kuznetsov and P. Neittaanmäki. Overlapping domain decomposition methods for the simplified Dirichlet–Signorini problem. In W. F. Ames and P. J. van der Houven, editors, *Computational and Applied Mathematics II: Differential Equations* (Dublin, 1991), pages 297–306, Amsterdam, 1992. North-Holland.
65. C. A. Marinov, P. Neittaanmäki, and J.-P. Santanen. Signal delay for generally interconnected distributed structures. In J. J. H. Miller, editor, *Proc. of the Eighth International Conference on the Numerical Analysis of Semiconductor Devices and Integrated Circuits (NASECODE VIII, Vienna, 1992)*, pages 131–132. Boole Press, 1992.
66. R. Mäkinen, P. Neittaanmäki, and D. Tiba. A boundary controllability approach in optimal shape design. In *Boundary Control and Boundary Variation* (Sophia-Antipolis, 1990), number 178 in *Lecture Notes in Control and Inform. Sci.*, pages 309–320, Berlin, 1992. Springer.
67. P. Neittaanmäki and V. Rivkind. Remarks on some optimization problems in fluid dynamics. In *Proceedings of the Workshop on Optimization and Optimal Control* (Jyväskylä, 1992), number 58 in *Ber. Univ. Jyväskylä Math. Inst.*, pages 137–144, 1993.
68. R. A. E. Mäkinen and P. Neittaanmäki. Sensitivity analysis for shape optimization problems in structural and fluid mechanics. In J. Herskovits, editor, *Structural optimization 93 – The World Congress on Optimal Design of Structural Systems* (Rio de Janeiro, 1993), Vol. II, pages 173–180. Associação Brasileira de Ciências Mecânicas, 1993.
69. C. A. Marinov and P. Neittaanmäki. Bounds for distributed parameter trees. In *1993 IEEE International Symposium on Circuits and Systems (ISCAS 1993, Chicago, IL)*, Vol. 3 – VLSI and Parallel Processing, pages 1551–1554. IEEE, 1993.
70. Yu. A. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Overlapping domain decomposition methods for the obstacle problem. In A. Quarteroni, J. Periaux, Y. A. Kuznetsov, and O. B. Widlund, editors, *Domain Decomposition Methods in Science and Engineering* (Como, 1992), number

- 157 in *Contemp. Math.*, pages 271–277, Providence, RI, 1994. Amer. Math. Soc.
71. P. Neittaanmäki and V. Rivkind. Drops moving in flow with chemical reaction. In S. Wagner, E. H. Hirschel, J. Periaux, and R. Piva, editors, *Computational Fluid Dynamics '94 – Proc. of the 2nd European CFD Conference (Stuttgart, 1994)*, pages 888–893, Chichester, 1994. J. Wiley & Sons.
  72. C. A. Marinov and P. Neittaanmäki. Bounds for the delay time in distributed and lumped type RC tree networks. In D. Auvergne and A. Rubio, editors, *Prof. of the Fourth International Workshop on Power and Timing Modeling, Optimization and Simulation (PATMOS'94, Barcelona)*, pages 50–58. Polytechnical University of Catalonia (UPC), 1994.
  73. A. Murgu, P. Neittaanmäki, and V. Hara. A neural networks approach of routing/flow control for communication networks. In *Proceedings of IEEE World Congress on Computational Intelligence (ICNN'94, Orlando, FL)*, pages 2667–2672, 1994.
  74. P. Neittaanmäki, V. Rivkind, and V. Zheludev. A wavelet transform based on periodic splines and finite element method. In *Finite Element Methods. Fifty Years of the Courant Element (Jyväskylä, 1993)*, number 164 in *Lecture Notes in Pure and Applied Mathematics*, pages 325–334, New York, 1994. Marcel Dekker.
  75. Yu. A. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Schwarz methods for obstacle problems with convection-diffusion operators. In D. E. Keyes and J. Xu, editors, *Domain Decomposition Methods in Scientific and Engineering Computing (University Park, PA, 1993)*, number 180 in *Contemp. Math.*, pages 251–256, Providence, RI, 1995. Amer. Math. Soc.
  76. P. Neittaanmäki, V. Rivkind, and L. Rukhovets. Mathematical and numerical modeling of pollution of lakes. In G. F. Carey, editor, *Finite Element Modeling of Environmental Problems. Surface and Subsurface Flow and Transport*, pages 209–227, Chichester, 1995. J. Wiley & Sons.
  77. J. Raitamäki, P. Viljamaa, H. Koivo, and P. Neittaanmäki. Basis functions in soft computing and in finite element method. In *Proc. of EUFIT'96 – Fourth European Congress on Intelligent Techniques and Soft Computing (Aachen, 1996)*, Vol. 1, pages 115–119, 1996.
  78. P. Viljamaa, J. Raitamäki, P. Neittaanmäki, and H. Koivo. Basis functions in soft computing. In *Proc. of WAC'96 – Second World Automation Congress (Montpellier, 1996)*.

79. Yu. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Overlapping block methods for obstacle problems with convection-diffusion operators. In M. C. Ferris and J. S. Pang, editors, *Complementarity and Variational Problems* (Baltimore, MD, 1995), pages 165–180, Philadelphia, PA, 1997. SIAM.
80. R. A. E. Mäkinen, P. Neittaanmäki, J. Periaux, M. Sefrioui, and J. Toivanen. Parallel genetic solution for multiobjective MDO. In P. Schiano, A. Ecer, J. Periaux, and N. Satofuka, editors, *Parallel Computational Fluid Dynamics: Algorithms and Results Using Advanced Computers* (Parallel CFD'96, Capri), pages 352–359, Amsterdam, 1997. North-Holland.
81. X.-C. Tai and P. Neittaanmäki. A pointwise error estimate for distributed parameter identification. In D. Bainov and V. Covachev, editors, *7th Int. Coll. on Differential Equations*, pages 455–468. VSP International Science Publishers, 1997.
82. M. Rudnicki, P. Neittaanmäki, and T. Jokinen. Neural network simulation of a pulse magnetiser for magnetising permanent magnets. In *Proc. International Symposium on Theoretical Electrical Engineering (ISTET'97, Palermo)*, pages 396–399, 1997.
83. R. A. E. Mäkinen, P. Neittaanmäki, J. Periaux, and J. Toivanen. A genetic algorithm for multiobjective design optimization in aerodynamics and electromagnetics. In K. D. Papailiou, D. Tsahalis, J. Periaux, and C. Hirsch, editors, *Computational Fluid Dynamics '98, Vol. 2: Invited Lectures, Minisymposia and Special Technological Sessions of the Fourth ECCOMAS Conference* (Athens, 1998), pages 418–422, Chichester, 1998. J. Wiley & Sons.
84. M. Křížek and P. Neittaanmäki. Bibliography on superconvergence. In *Finite Element Methods: Superconvergence, Post-processing and A Posteriori Estimates* (Jyväskylä, 1996), number 196 in *Lecture Notes in Pure and Appl. Math.*, pages 315–348, New York, 1998. Marcel Dekker.
85. P. Neittaanmäki and D. Tiba. Shape optimization in free boundary systems. In N. Kenmochi, editor, *Proceedings of International Conference on Free Boundary Problems: Theory and Applications II* (Chiba, 1999), number 14 in *GAKUTO International Series: Mathematical Sciences and Applications*, pages 334–343, Tokyo, 2000. Gakkōtoshō.
86. V.-M. Hokkanen, G. Moroşanu, and P. Neittaanmäki. An inverse problem for the telegraph system. In *Numerical Mathematics and Advanced Applications* (ENUMATH 99, Jyväskylä), pages 303–307, River Edge, NJ, 2000. World Scientific.

87. S. Korotov, P. Neittaanmäki, and M. Křížek. On discrete maximum principle for tetrahedral elements satisfying a weakened acute type condition. In *Numerical Mathematics and Advanced Applications (ENUMATH 99, Jyväskylä)*, pages 587–592, River Edge, NJ, 2000. World Scientific.
88. A. Yu. Kokotov, P. Neittaanmäki, and B. A. Plamenevskii. Neumann problem for the wave equation in a wedge. In N. N. Uraltseva, editor, *Teoriya funktsij i prilozhenija (Theory of Functions and Applications), Problemy matematičeskogo analiza, Vyp. 20*, pages 71–110, Novosibirsk, 2000. Nauchnaya kniga (IDMI). (In Russian).
89. V. E. Grikurov, M. A. Lyalinov, P. Neittaanmäki, and B. A. Plamenevskii. Existence criterion of surface waves in diffraction gratings. In *Digests of the 9th Biennial IEEE Conference on Electromagnetic Field Computation (CEFC-2000, Milwaukee, WI)*, Milwaukee, WI, 2000. IEEE and Marquette University.
90. N. Banichuk, M. M. Mäkelä, and P. Neittaanmäki. Shape optimization for structures from quasi-brittle materials subject to cyclic loads. In G. De Roek and B. H. V. Topping, editors, *Identification, Control and Optimisation of Engineering Structures (Leuven, 2000)*, pages 145–151, Edinburgh, 2000. Civil-Comp Press.
91. M. Křížek, L. Liu, and P. Neittaanmäki. On harmonic and biharmonic finite elements. In *Finite Element Methods. Three-Dimensional Problems (Jyväskylä, 2000)*, number 15 in GAKUTO International Series. Mathematical Sciences and Applications, pages 143–151, Tokyo, 2001. Gakkōtoshō.
92. V. E. Grikurov, E. Heikkola, P. Neittaanmäki, and B. A. Plamenevskii. Scattering matrices and surface waves for diffraction gratings. In *Computational and Mathematical Methods on Science and Engineering (CMMSE-2002, Alicante)*, Vol. II, pages 158–165, 2003.
93. V. O. Kalvine, P. Neittaanmäki, and B. A. Plamenevskii. On a method of search for trapped modes in domains with cylindrical ends. In *Mathematical and Numerical Aspects of Wave Propagation (WAVES 2003, Jyväskylä)*, pages 469–474, Berlin, 2003. Springer.
94. A. Kravchuk and P. Neittaanmäki. Dynamic identification of the deformed body parameters. In *Mathematical and Numerical Aspects of Wave Propagation (WAVES 2003, Jyväskylä)*, pages 577–581, Berlin, 2003. Springer.
95. A. S. Kravchuk and P. Neittaanmäki. Variational method for the dynamic contact problems of the elastic bodies. In V. I. Belokon, editor, *Mathematical*

- Problems of the Theory of Elasticity (Rostov-na-Donu, 2003), pages 77–82, Rostov-na-Donu, 2003. Rostov University Press.
96. M. Frolov, P. Neittaanmäki, and S. Repin. On computational properties of a posteriori error estimates based upon the method of duality error majorants. In M. Feistauer, V. Dolejší, P. Knobloch, and K. Najzar, editors, Numerical Mathematics and Advanced Applications (ENUMATH 2003, Prague), pages 346–357, Berlin, 2004. Springer-Verlag.
  97. S. Korotov, P. Neittaanmäki, and S. Repin. A posteriori error estimation in terms of linear functionals for boundary value problems of elliptic type. In M. Feistauer, V. Dolejší, P. Knobloch, and K. Najzar, editors, Numerical Mathematics and Advanced Applications (ENUMATH 2003, Prague), pages 587–595, Berlin, 2004. Springer-Verlag.
  98. A. Kravchuk, P. Neittaanmäki, and I. Goryacheva. Boundary value problems and inequalities in contact mechanics. In Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol I, Jyväskylä, 2004. University of Jyväskylä. CD-ROM.
  99. M. Dementieva, P. Neittaanmäki, and V. Zakharov. Time-consistent decision making in models of co-operation. In Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol II, Jyväskylä, 2004. University of Jyväskylä. CD-ROM.
  100. S. Korotov, P. Neittaanmäki, and S. Repin. A posteriori error estimation of “quantities of interest” for the elliptic-type boundary value problems. In Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol II, Jyväskylä, 2004. University of Jyväskylä. CD-ROM.
  101. M. Frolov, P. Neittaanmäki, and S. Repin. On practical implementation of duality error majorants for boundary-value problems arising in the theory of plates. In Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol II, Jyväskylä, 2004. University of Jyväskylä. CD-ROM.
  102. P. Fadjukoff and P. Neittaanmäki. Agora Human Technology Center – combining technical and social innovations. In Q.-R. Xu, X.-B. Wu, and J. Chen, editors, Managing Total Innovation in the 21st Century. Proceedings of the 4th International Symposium on Management of Technology and Innovation, pages 826–828, Hangzhou, 2004. Zhejiang University Press.
  103. E. Gorshkova, P. Neittaanmäki, and S. Repin. Comparative study of the a posteriori error estimators for the Stokes problem. In Numerical

- Mathematics and Advanced Applications (ENUMATH 2005, Santiago de Compostela), pages 252–259, Berlin, 2006. Springer.
104. E. Jokisuu, M. Kankaanranta, and P. Neittaanmäki. Problems and barriers in information and communications technology usage among senior citizens in Finland. In Proceedings of the 1st International Conference on Software Development for Enhancing Accessibility and Fighting Info-exclusion, pages 31–37, Vila Real, 2007. UTAD – Universidade de Trás-os-Montes e Alto Douro.
  105. T. Ruohonen, E. Leppänen, H. Lähdevaara, and P. Neittaanmäki. Selecting a new robot for the clinical laboratory by using a simulation model. In Proceedings of the 6th EUROSIM Congress on Modelling and Simulation, 2007. DVD.
  106. T. Ruohonen, P. Neittaanmäki, and J. Teittinen. Evaluating the effects of a pneumatic tube delivery system on the patient’s length of stay in an emergency department by using a simulation model. In Proceedings of the 6th EUROSIM Congress on Modelling and Simulation, 2007.
  107. S. Matyukevich and P. Neittaanmäki. Nonstationary Maxwell system with nonhomogeneous boundary conditions in domains with conical points. In Proceedings of the St. Petersburg Mathematical Society, Vol. XIII, number 222 in Amer. Math. Soc. Transl. Ser. 2, pages 111–162, Providence, RI, 2008. Amer. Math. Soc.
  108. N. Banichuk and P. Neittaanmäki. Incompleteness of information and reliable optimal design. In P. Neittaanmäki, J. Périaux, and T. Tuovinen, editors, Evolutionary and Deterministic Methods for Design, Optimization and Control: Applications to Industrial and Societal Problems (EUROGEN 2007, Jyväskylä), pages 29–38, Barcelona, 2008. CIMNE.
  109. N. Banichuk and P. Neittaanmäki. Optimal design with incomplete information using worst case scenario. In F. L. Chernousko, G. V. Kostin, and V. V. Saurin, editors, Advances in Mechanics: Dynamics and Control. Proceedings of the 14th International Workshop on Dynamics and Control, pages 46–52, Moscow, 2008. Nauka.
  110. N. V. Kuznetsov, G. A. Leonov, S. M. Seledzhi, and P. Neittaanmäki. Analysis and design of computer architecture circuits with controllable delay line. In Proceedings of the 6th International Conference on Informatics in Control, Automation and Robotics, Vol. 3 – Signal Processing, Systems Modeling and Control (ICINCO 2009, Milan), pages 221–224, Setúbal, 2009. INSTICC Press.

111. P. Neittaanmäki and S. Repin. Computable error indicators for approximate solutions of elliptic problems. In J. Eberhardsteiner, C. Hellmich, H. A. Mang, and J. Périaux, editors, *ECCOMAS Multidisciplinary Jubilee Symposium: New Computational Challenges in Materials, Structures, and Fluids*, number 14 in *Computational Methods in Applied Sciences*, pages 203–218, Berlin, 2009. Springer.
112. O. J. Mali, P. J. Neittaanmäki, and S. I. Repin. Estimates for error generated by indeterminate elasticity tensor. In J. C. F. Pereira, A. Sequeira, and J. M. C. Pereira, editors, *Proceedings of the 5th European Conference on Computational Fluid Dynamics (ECCOMAS CFD 2010)*, 2010. CD-ROM, 6 p.
113. I. B. Anjam, O. J. Mali, P. J. Neittaanmäki, and S. I. Repin. New indicators of approximation errors for problems in continuum mechanics. In J. C. F. Pereira, A. Sequeira, and J. M. C. Pereira, editors, *Proceedings of the 5th European Conference on Computational Fluid Dynamics (ECCOMAS CFD 2010)*, 2010. CD-ROM, 10 p.
114. G. A. Leonov, S. M. Seledzhi, N. V. Kuznetsov, and P. Neittaanmäki. Asymptotic analysis of phase control system for clocks in multiprocessor arrays. In *Proceedings of the 7th International Conference on Informatics in Control, Automation and Robotics (ICINCO 2010, Funchal)*, Vol. 3, pages 99–102. INSTICC Press, 2010.
115. N. V. Kuznetsov, G. A. Leonov, P. Neittaanmäki, S. M. Seledzhi, M. V. Yuldashev, and R. V. Yuldashev. Nonlinear analysis of phase-locked loop. In *Proceedings of the 4th IFAC Workshop on Periodic Control Systems (Antalya, 2010)*, *Periodic Control Systems, Volume # 4, Part # 1*, pages 34–38. International Federation of Automatic Control, 2010. doi: 10.3182/20100826-3-TR-4016.00010.
116. R. Kuoremäki, J. Varsaluoma, T. Nousiainen, M. Kankaanranta, and P. Neittaanmäki. Improving independent physical activity with mobile solutions among aging office employees. In G. Bradley, D. Whitehouse, and G. Singh, editors, *Proceedings of the International Association for Development of the Information Society (IADIS) Multi Conference on Computer Science and Information Systems (Italy, 2011)*, Rooma, 2011. IADIS.
117. A. Averbuch, V. Zheludev, and P. Neittaanmäki. Regularized matching pursuit for deconvolution. In A. Khong and F. Oggier, editors, *Proceedings of the 9th International Conference on Sampling Theory and Applications (SampTA 2011)*, Singapore, 2011. Nanyang Technological University.



<http://sampta2011.ntu.edu.sg/SampTA2011Proceedings/papers/Th2R06.1-P0141.pdf>.

118. A. Averbuch, V. Zheludev, and P. Neittaanmäki. Block based algorithms for images deconvolution. In A. Khong and F. Oggier, editors, Proceedings of the 9th International Conference on Sampling Theory and Applications (SampTA 2011), Singapore, 2011. Nanyang Technological University. <http://sampta2011.ntu.edu.sg/SampTA2011Proceedings/papers/Mo5R02.4-P0143.pdf>.
119. N. Kuznetsov, G. Leonov, P. Neittaanmäki, S. Seledzhi, M. Yuldashev, and R. Yuldashev. Highfrequency analysis of phase-locked loop and phase detector characteristic computation. In J. Ferrier, A. Bernard, O. Gusikhin, and K. Madani, editors, Proceedings of the 8th International Conference on Informatics in Control, Automation and Robotics, pages 272–278, Setubal, 2011. SciTePress. doi: 10.5220/0003522502720278.
120. M. Salhov, G. Wolf, A. Averbuch, and P. Neittaanmäki. Patch-based data analysis using linear-projection diffusion. In J. Hollmen, F. Klawonn, and A. Tucker, editors, Advances in Intelligent Data Analysis XI. Proceedings of the 11th International Symposium, IDA 2012 (Helsinki, 2012), number 7619 in Lecture Notes in Computer Science, pages 334–345, Berlin, 2012. Springer.
121. M. Salhov, G. Wolf, A. Bermanis, A. Averbuch, and P. Neittaanmäki. Dictionary construction for patch-to-tensor embedding. In J. Hollmen, F. Klawonn, and A. Tucker, editors, Advances in Intelligent Data Analysis XI. Proceedings of the 11th International Symposium, IDA 2012 (Helsinki, 2012), number 7619 in Lecture Notes in Computer Science, pages 346–356, Berlin, 2012. Springer.
122. N. V. Kuznetsov, G. A. Leonov, P. Neittaanmäki, S. M. Seledzhi, M. V. Yuldashev, and R. V. Yuldashev. Nonlinear mathematical models of Costas loop for general waveform of input signal. In NSC 2012 – 4th IEEE International Conference on Nonlinear Science and Complexity (Budapest, 2012), pages 75–80. IEEE, 2012. doi: 10.1109/NSC.2012.6304729.
123. M. A. Kiseleva, N. V. Kuznetsov, G. A. Leonov, and P. Neittaanmäki. Drilling systems failures and hidden oscillations. In NSC 2012 – 4th IEEE International Conference on Nonlinear Science and Complexity (Budapest, 2012), pages 109–112. IEEE, 2012. doi: 10.1109/NSC.2012.6304736.
124. T. Nousiainen, M. Kankaanranta, and P. Neittaanmäki. Design activities and contributions in the creation of ideas for educational mobile applications for school-aged children. In I. A. Sánchez and P. Isaías, editors, Proceedings of

- the IADIS International Conference Mobile Learning 2012 (Berlin, 2012), pages 91–98. IADIS Press, 2012.
125. J. Liimatainen, M. Häkkinen, T. Nousiainen, M. Kankaanranta, and P. Neittaanmäki. A mobile application concept to encourage independent mobility for blind and visually impaired students. In K. Miesenberger, A. Karshmer, P. Penaz, and W. Zagler, editors, *Computers Helping People with Special Needs, Proceedings of the 13th International Conference ICCHP (Linz, 2012), Part II, volume 7383 of Lecture Notes in Computer Science*, pages 552–559, Berlin, 2012. Springer. doi:10.1007/978-3-642-31534-3\_81.
  126. M. Kiseleva, N. Kuznetsov, G. Leonov, P. Neittaanmäki, S. M. Seledzhi, M. V. Yuldashev, and R. V. Yuldashev. Hidden oscillations in drilling system actuated by induction motor. In *Proceedings of the 5th IFAC Workshop on Periodic Control Systems (Caen, 2013), Periodic Control Systems, Volume # 5, Part # 1*, pages 86–89. International Federation of Automatic Control, 2013. doi: 10.3182/20130703-3-FR-4039.00028.
  127. N. V. Kuznetsov, G. A. Leonov, P. Neittaanmäki, S. M. Seledzhi, M. V. Yuldashev, and R. V. Yuldashev. Phase-frequency domain model of Costas loop with mixer discriminator. In J.-L. Ferrier, O. Gusikhin, K. Madani, and J. Sasiadek, editors, *ICINCO 2013 – Proceedings of the 10th International Conference on Informatics in Control, Automation and Robotics, Volume 1 (Reykjavik, 2013)*, pages 427–433. SciTePress, 2013.
  128. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Spline-based frames for image restoration. In W. Henkel, editor, *Proceedings of the 10th International Conference on Sampling Theory and Applications (SampTA 2013)*, pages 464–467. EURASIP, 2013.
  129. J. Kansanaho, J. Hämäläinen, A. Gontarenko, J. Saltiola, A. Pekkala, T. Nousiainen, and P. Neittaanmäki. USUKO – new generation school. In J. Herrington, J. Viteli, and M. Leikomaa, editors, *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2014*, pages 802–806, Chesapeake, 2014. Association for the Advancement of Computing in Education.
  130. R. Kuoremäki, M. Poskiparta, and P. Neittaanmäki. Involving the elderly in the content development of a health enhancing tablet-based service. In *Proceedings of the 2014 4th International Conference on Wireless Mobile Communication and Healthcare – “Transforming healthcare through innovations in mobile and wireless technologies” (MOBIHEALTH)*, pages 28–31. IEEE, 2014. doi: 10.1109/MOBIHEALTH.2014.7015901.

131. N. Kuznetsov, O. Kuznetsova, G. Leonov, P. Neittaanmäki, M. Yuldashev, and R. Yuldashev. Simulation of nonlinear models of QPSK Costas loop in MatLab Simulink. In 2014 6th International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT), pages 66–71. IEEE, 2014. doi: 10.1109/ICUMT.2014.7002080.
132. A. Algawi, P. Neittaanmäki, N. Zaidenberg, and T. Parisinos. In kernel implementation of RSA routines. In B. Endicott-Popovsky, editor, Proceedings of the 2nd International Conference on Cloud Security Management ICCSM-2014, pages 149–153. Academic Conferences and Publishing International, 2014.
133. E. Tamir, N. Zaidenberg, and P. Neittaanmäki. TrulyTrusted operating system environment. In B. Endicott-Popovsky, editor, Proceedings of the 2nd International Conference on Cloud Security Management ICCSM-2014, pages 154–157. Academic Conferences and Publishing International, 2014.
134. P. Neittaanmäki and T. Puranen. Scalable deployment of efficient transportation optimization for SMEs and public sector. In D. Greiner, B. Galván, J. Periaux, N. Gauger, K. Giannakoglou, and G. Winter, editors, Advances in Evolutionary and Deterministic Methods for Design, Optimization and Control in Engineering and Sciences Computational Methods in Applied Sciences, volume 36 of Computational Methods in Applied Sciences, pages 473–484. Springer, 2015. doi: 10.1007/978-3-319-11541-2\_31.
135. M. Gavriushenko, M. Kankaanranta, and P. Neittaanmäki. Semantically enhanced decision support for learning management systems. In M. Kankanhalli, T. Li, and W. Wang, editors, Proceedings of the 2015 IEEE 9th International Conference on Semantic Computing (IEEE ICSC 2015), pages 298–305. IEEE, 2015. doi: 10.1109/ICOSC.2015.7050823.
136. N. Kuznetsov, O. Kuznetsova, G. A. Leonov, P. Neittaanmäki, M. Yuldashev, and R. Yuldashev. Limitations of the classical phase-locked loop analysis. In 2015 IEEE International Symposium on Circuits and Systems (ISCAS), pages 533–536. IEEE, 2015. doi: 10.1109/ISCAS.2015.7168688.
137. K. D. Alexandrov, N. Kuznetsov, G. A. Leonov, P. Neittaanmäki, and S. M. Seledzhi. Pull-in range of the classical PLL with impulse signals. In F. Breitenacker, A. Kugi, and I. Troch, editors, MATHMOD 2015: Proceedings of the 8th Vienna International Conference on Mathematical Modelling, volume 48(1) of IFAC Proceedings Volumes (IFAC-PapersOnline), pages 562–567. IFAC, 2015. doi: 10.1016/j.ifacol.2015.05.090.

138. K. D. Alexandrov, N. Kuznetsov, G. A. Leonov, P. Neittaanmäki, and S. M. Seledzhi. Pull-in range of the PLL-based circuits with proportionally-integrating filter. In A. Bobtsov, S. Kolyubin, A. Pyrkin, and A. Fradkov, editors, MICNON 2015: Proceedings of the 1st IFAC Conference on Modelling, Identification and Control of Nonlinear Systems (Saint Petersburg, 2015), volume 48(11) of IFAC Proceedings Volumes (IFAC-PapersOnline), pages 720–724. IFAC, 2015. doi: 10.1016/j.ifacol.2015.09.274.
139. K. D. Alexandrov, N. Kuznetsov, G. A. Leonov, P. Neittaanmäki, M. Yuldashev, and R. Yuldashev. Computation of the lock-in ranges of phase-locked loops with PI filter. In 6th IFAC International Workshop on Periodic Control Systems (Eindhoven, 2016). To appear.

## B Non-refereed scientific articles

### B1 Non-refereed journal articles

1. M. Lehto and P. Neittaanmäki. Digitalisaatio muuttaa yhteiskunnan ja yksilöiden tapaa toimia (digitalization changes society's and individuals' way to act). *Tiedepolitiikka*, 41(1):56–63, 2016.

### B2 Book section

1. X.-C. Tai and P. Neittaanmäki. A FE-splitting-up method and its application to distributed parameter in parabolic equations. In A. G. Law and C. L. Wang, editors, *Approximation, Optimization and Computing: Theory and Applications*, pages 185–188. North-Holland, Amsterdam, 1990.
2. I. Lasiecka, J. Sokolowski, and P. Neittaanmäki. Regularization and finite element approximation of the wave equation with Dirichlet boundary data. In *Numerical Analysis and Mathematical Modelling*, number 24 in Banach Center Publ., pages 329–354. PWN, Warsaw, 1990.
3. P. Neittaanmäki, T. Räisänen, and D. Tiba. On the approximation of some ill-posed problems. In C. Corduneanu, editor, *Qualitative Problems for Differential Equations and Control Theory*, dedicated to Aristide Halanay on occasion of his 70th birthday, pages 251–262. World Sci. Publishing, River Edge, NJ, 1995.
4. T. Kärkkäinen and P. Neittaanmäki. Some relations between two strategies for solving optimal control problems with bilinear constraints. In O. Bristeau, G. Etgen, W. Fitzgibbon, J.-L. Lions, J. Periaux, and M. F. Wheeler, editors,

Computational Science for the 21st Century, pages 634–641. J. Wiley & Sons, Chichester, 1997.

5. M. Křížek, L. Liu, and P. Neittaanmäki. Finite element analysis of a nonlinear elliptic problem with a pure radiation condition. In A. Sequeira, H. B. da Veiga, and J. H. Videman, editors, *Applied Nonlinear Analysis. In honor of the 70th birthday of Professor Jindřich Nečas*, pages 271–280. Kluwer/Plenum, New York, 1999.
6. P. Neittaanmäki and L. Rivkind. Valeri Rivkind's mathematical work and its impact on analysis and numerics in fluid mechanics. In *Analysis and Approximation of Boundary Value Problems. A Memorial Meeting Dedicated to Prof. Valery Rivkind*, Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing, No. B8/2000, pages 1–17. University of Jyväskylä, 2000.
7. P. J. Neittaanmäki, S. I. Repin, and M. E. Frolov. On the reliability, effectivity and robustness of a posteriori error estimation methods. In *Numerical Methods for Scientific Computing. Variational Problems and Applications. Dedicated to Dr. Jacques Périaux on the occasion of his 60th birthday*, pages 153–175. CIMNE, Barcelona, 2003.
8. P. Neittaanmäki, S. Korotov, and J. Martikainen. A posteriori error estimation of “quantities of interest” on “quantity-adapted” meshes. In *Conjugate Gradient Algorithms and Finite Element Methods: A Half-Century of Contributions to Scientific Computing*, pages 171–181. Springer, Berlin, 2004.
9. M. Dementieva, P. Neittaanmäki, and V. Zakharov. Time-consistency and the problem of minimal reduction. In L. Petrosjan and V. Mazalov, editors, *Game Theory and Applications*, Vol. X, pages 71–86. Nova Sci. Publ., Hauppauge, NY, 2005.
10. P. Neittaanmäki and D. Tiba. A fixed domain approach in shape optimization problems with Neumann boundary conditions. In R. Glowinski and P. Neittaanmäki, editors, *Partial Differential Equations: Modelling and Numerical Simulation*, number 16 in *Computational Methods in Applied Sciences*, pages 235–244. Springer, Berlin, 2008.
11. P. Neittaanmäki and S. Repin. Guaranteed error bounds for conforming approximations of a Maxwell type problem. In *Applied and Numerical Partial Differential Equations: Scientific Computing in Simulation, Optimization and Control in a Multidisciplinary Context*, volume 15 of

Computational Methods in Applied Sciences, pages 199–211. Springer, Berlin, 2010.

12. E. V. Kudryashova, N. V. Kuznetsov, G. A. Leonov, P. Neittaanmäki, and S. M. Seledzhi. Analysis and synthesis of clock generator. In L. Fortuna, A. Fradkov, and M. Frasca, editors, *From Physics to Control Through an Emergent View*, volume 15 of World Scientific Series on Nonlinear Science, Series B, pages 131–136. World Sci. Publishing, River Edge, NJ, 2010.

### B3 Non-refereed conference proceedings

1. P. Neittaanmäki and D. Tiba. A descent method for the boundary control of a two-phase Stefan problem. In V. Barbu, editor, *Proc. of the Third Workshop on Differential Equations and Control Theory (Bucharest, 1983)*, pages 111–127. INCREST, 1983.
2. J. Haslinger and P. Neittaanmäki. Shape optimization in contact problems. In *Proceedings of the Summer School in Numerical Analysis*, number 31 in Ber. Univ. Jyväskylä Math. Inst., pages 175–186, 1985.
3. A. Kaarna and P. Neittaanmäki. CAE/FEM. In *Proceedings of the Summer School in Numerical Analysis*, number 31 in Ber. Univ. Jyväskylä Math. Inst., pages 197–206, 1985.
4. P. Neittaanmäki, P. Koikkalainen, and C. A. Marinov. On the computation of the delay time in some parabolic problems. In *Proceedings of the Summer School in Numerical Analysis*, number 31 in Ber. Univ. Jyväskylä Math. Inst., pages 239–247, 1985.
5. P. Neittaanmäki and E. Laitinen. Optimization of cooling conditions in continuous casting. In *Proceedings of the Summer School in Numerical Analysis*, number 31 in Ber. Univ. Jyväskylä Math. Inst., pages 249–257, 1985.
6. C. A. Marinov and P. Neittaanmäki. Asymptotic behaviour for distributed parameter circuits with transistors. In *Abstracts in Int. Conf. of Industrial and Applied Mathematics*. Paris, 1987.
7. P. Neittaanmäki. Osittaisdifferentiaaliyhtälöpohjainen simulointi ja FEM (Simulation based on partial differential equations and FEM). In *Numeeriset simulointimallit (Numerical simulation models)*, number 80 in VTT-Symposium, pages 187–192, 1987. Proceedings (in Finnish).
8. S. Kaijaluoto, P. Neittaanmäki, and J. Ruhtila. Comparison of different solution algorithms for sparse linear systems. In *Proc. of XIX Conference; the*

- Use of Computers in Chemical Engineering (CHEMDATA 88, Göteborg), pages 117–123, 1988.
9. K. Salmenjoki, P. Neittaanmäki, and G. Arumugam. On the shape design of magnets. In Proceedings of the Minisymposium on Numerical Methods for Semiconductors and Magnets (Jyväskylä, 1988), number 42 in Ber. Univ. Jyväskylä Math. Inst., pages 105–116, 1988.
  10. P. Neittaanmäki. Methods for optimal shape design problems. In Proceedings of the Minisymposium on Numerical Methods for Semiconductors and Magnets (Jyväskylä, 1988), number 42 in Ber. Univ. Jyväskylä Math. Inst., pages 75–87, 1988.
  11. E. Laitinen and P. Neittaanmäki. On the real time control of the secondary cooling in the continuous casting process. In Proc. of SIMS-88 (Scandinavian Simulation Society) Meeting, number 84 in VTT-Symposium Series, pages 305–317, 1988.
  12. P. Neittaanmäki. Numerical methods for optimal shape design. In S. Blagovest, R. Lazarov, and I. Dimov, editors, Numerical Methods and Applications (Sofia, 1989), pages 335–343, Sofia, 1989. Publ. House Bulgar. Acad. Sci.
  13. P. Neittaanmäki and K. Salmenjoki. Sensitivity analysis for optimal shape design problems. In S. Blagovest, R. Lazarov, and I. Dimov, editors, Numerical Methods and Applications (Sofia, 1989), pages 344–350, Sofia, 1989. Publ. House Bulgar. Acad. Sci.
  14. P. Neittaanmäki and K. Salmenjoki. On FE-grid relocation in contact problems. In Proc. of FEMCAD 89 Conference, pages 315–323, Paris, 1989. IITT-International.
  15. P. Neittaanmäki. Optimal structural design in contact problems. In Proc. of FEMCAD 89 Conference, pages 31–39, Paris, 1989. IITT-International.
  16. P. Neittaanmäki and E. Laitinen. On the real-time simulation and control of the continuous casting process. In H. Kalli and J. Tuunanen, editors, Proc. of Lappeenranta Fifth Summer School on Heat Transfer, Report END–16, Part I, page 9 p. Lappeenranta University of Technology, Dept. of Energy Technology, 1988.
  17. P. Neittaanmäki. FEM – finite element method. In Finite Element Method in Simulation, CSC Research Reports R07/90, pages 92–101. Center for Scientific Computing, 1990.

18. X.-C. Tai, P. Neittaanmäki, and T. Lu. A parallel splitting up method and its applications to Navier–Stokes equations. In *Finite Element Method in Simulation*, CSC Research Reports R07/90, pages 152–157. Center for Scientific Computing, 1990.
19. P. Luhtanen, H. Rusko, J. Viitasalo, P. Perämäki, P. Neittaanmäki, S. Puuronen, M. Mäkelä, and J.-P. Santanen. An expert system for talent searching in long distance running. In *Abstracts of VIII ISBS Symposium (Prague, 1990)*, pages 15–16, 1990.
20. C. Marinov and P. Neittaanmäki. Mathematical modelling of electrical circuits with distributed parameters. In *Proc. of 8th International Conference on Control Systems and Computer Science*, pages 195–198, Bucharest, 1991. Polytechnical Institute of Bucharest, Department of Control and Computers.
21. P. Neittaanmäki. Optimal shape design. In M. Heiliö, editor, *Proc. of the Fifth European Conference on Mathematics in Industry (Lahti, 1990)*, number 7 in European Consort. *Math. Indust.*, pages 45–54, Stuttgart, 1991. Teubner.
22. P. Neittaanmäki. On the computer aided optimal structural design. In E. Niemi, editor, *Proc. of the 4th Finnish Mechanical Days (Lappeenranta, 1991)*, number 17 in *Research papers*, pages 11–23. Lappeenranta University of Technology, 1991.
23. P. Neittaanmäki, S. Repin, and V. Rivkind. Conforming finite element methods using discontinuous approximations. In *Jyväskylä–St. Petersburg Seminar on Partial Differential Equations and Numerical Methods (Jyväskylä, 1993)*, number 56 in *Ber. Univ. Jyväskylä Math. Inst.*, pages 63–87, 1993.
24. P. Neittaanmäki and V. Rivkind. Mathematical modelling of liquid drops evaporation. In *Jyväskylä–St. Petersburg Seminar on Partial Differential Equations and Numerical Methods (Jyväskylä, 1993)*, number 56 in *Ber. Univ. Jyväskylä Math. Inst.*, pages 89–100, 1993.
25. P. Neittaanmäki, V. Rivkind, and G. Seregin. A dual finite element approach for stresses of elasto-perfectly plastic bodies. In *Jyväskylä–St. Petersburg Seminar on Partial Differential Equations and Numerical Methods (Jyväskylä, 1993)*, number 56 in *Ber. Univ. Jyväskylä Math. Inst.*, pages 101–110, 1993.
26. A. Murgu, P. Neittaanmäki, and V. Hara. A neural approach of dynamic priority assignment in a queueing network. In *Proc. of the 1994 Internat. Fuzzy Systems and Intelligent Control Conference (Louisville, KY, 1994)*, pages 248–257, 1994.



27. A. Murgu, V. Hara, and P. Neittaanmäki. Adaptive control for network traffic in mobile communications. In Proc. of the International Conference on Robotics, Vision and Parallel Processing for Industrial Automation (ROVPIA 94, Ipoh), 1994.
28. A. Murgu, C. A. Marinov, V. Hara, and P. Neittaanmäki. A neural networks model for Brownian control problems. In Proc. of the 3rd Turkish Symposium on Artificial Intelligence and Neural Networks (Ankara, 1994), pages 151–160, 1994.
29. P. Neittaanmäki, V. Rivkind, and L. Seioukova. Some mechanical problems in thin channels. In Proceedings of the 5th Finnish Mechanics Days, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, Report 3, pages 281–288, 1994.
30. T. Lähteenmäki, S. Hänninen, E. Laitinen, P. Neittaanmäki, and P. V. Komi. Software for 3D modelling of human motion. In Fifth International Symposium on Computer Simulation in Biomechanics (Jyväskylä, 1995), pages 52–53, 1995. Satellite Event to the Fifteenth ISB Congress, Book of Abstracts.
31. A. Aumo, S. Koivisto, P. Fadjukoff, and P. Neittaanmäki. Jyväskylä Science Park – from ideas to business. In Q.-R. Xu, X.-B. Wu, and J. Chen, editors, Managing Total Innovation in the 21st Century. Proceedings of the 4th International Symposium on Management of Technology and Innovation, pages 829–833, Hangzhou, 2004. Zhejiang University Press.
32. T. Tuovinen, J. Jeronen, P. Neittaanmäki, and N. Banichuk. On the instability of an axially moving elastic plate. In L. Damkilde, L. Andersen, A. Schmidt Kristensen, and E. Lund, editors, Proceedings of the Twenty Second Nordic Seminar on Computational Mechanics, number 11 in DCE Technical Memorandum, pages 95–99, Aalborg, 2009. Aalborg University.
33. J. Jeronen, T. Tuovinen, P. Neittaanmäki, and N. Banichuk. Instability analysis of axially travelling membranes and plates interacting with axially moving ideal fluid. In L. Damkilde, L. Andersen, A. Schmidt Kristensen, and E. Lund, editors, Proceedings of the Twenty Second Nordic Seminar on Computational Mechanics, number 11 in DCE Technical Memorandum, pages 101–104, Aalborg, 2009. Aalborg University.
34. I. Anjam, O. Mali, P. Neittaanmäki, and S. Repin. A new error indicator for the Poisson problem. In Proceedings of the 10th Finnish Mechanics Days (Jyväskylä, 2009), number A1/2009 in Reports of the Department of

Mathematical Information Technology, Series A, Collections, pages 324–330. University of Jyväskylä, 2009.

35. J. Jeronen, N. Banichuk, P. Neittaanmäki, and T. Tuovinen. On the effects of bending rigidity on the stability of an axially moving orthotropic plate. In Proceedings of the 10th Finnish Mechanics Days (Jyväskylä, 2009), number A1/2009 in Reports of the Department of Mathematical Information Technology, Series A, Collections, pages 510–521. University of Jyväskylä, 2009.
36. P. Neittaanmäki and S. Repin. Error indicators for elliptic problems without extra regularity assumptions. In Ph. Bouillard and P. Díez, editors, Proceedings of the IV International Conference on Adaptive Modeling and Simulation (ADMOS 2009, Bruxelles), pages 149–152, Barcelona, 2009. CIMNE.
37. I. Anjam, O. Mali, P. Neittaanmäki, and S. Repin. Estimates of uncertainty errors for a magnetostatics problem. In D. Aubry, P. Díez, B. Tie, and N. Parés, editors, Proceedings of the ADMOS 2011 Conference, pages 65–69, Barcelona, 2011. CIMNE.
38. L. Baskin, P. Neittaanmäki, and O. Sarafanov. Asymptotics of electron flow spin-polarization in quantum waveguides of variable cross-section in presence of magnetic field. In J. Eberhardsteiner, H. Böhm, and F. Rammerstorfer, editors, Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), Vienna, 2012. Vienna University of Technology. CD-ROM.
39. M. Kabardov and P. Neittaanmäki. Comparison of asymptotic and numerical studies of electron flow spin-polarization in quantum waveguide in magnetic field. In J. Eberhardsteiner, H. Böhm, and F. Rammerstorfer, editors, Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), Vienna, 2012. Vienna University of Technology. CD-ROM.
40. J. Soikkeli, T. Ruohonen, K. Hänninen, and P. Neittaanmäki. Simulating and optimizing the impact of ERP (Enterprise Resource Planning) in home care. In D. G. Sánchez, B. J. G. González, J. Periaux, N. Gauger, K. Giannakoglou, and G. W. Althaus, editors, Eurogen 2013 Proceedings: Evolutionary and Deterministic Methods for Design, Optimization and Control with Applications to Industrial and Societal Problems, Las Palmas, 2014. Universidad de Las Palmas de Gran Canaria.

## C Scientific books (monographs)

### C1 Book

1. J. Haslinger and P. Neittaanmäki. Finite element approximation for optimal shape design: Theory and applications. J. Wiley & Sons, Chichester, 1988.
2. M. Křížek and P. Neittaanmäki. Finite element approximation of variational problems and applications, volume 50 of Pitman Monographs and Surveys in Pure and Applied Mathematics. Longman Scientific & Technical, Harlow; Copubl. J. Wiley & Sons, New York, 1990.
3. C. A. Marinov and P. Neittaanmäki. Mathematical models in electrical circuits: Theory and applications, volume 66 of Mathematics and its Applications. Kluwer Academic Publishers, Dordrecht, 1991.
4. M. Mäkelä and P. Neittaanmäki. Nonsmooth optimization: Analysis and algorithms with applications to optimal control. World Scientific Publishing Co., River Edge, NJ, 1992. 18
5. P. Neittaanmäki and D. Tiba. Optimal control of nonlinear parabolic systems: Theory, algorithms and applications. Marcel Dekker, New York, 1994.
6. P. Neittaanmäki, M. Rudnicki, and A. Savini. Inverse problems and optimal design in electricity and magnetism. Oxford University Press, 1996.
7. J. Haslinger and P. Neittaanmäki. Finite element approximation for optimal shape, material and topology design. J. Wiley & Sons, Chichester, 2nd edition, 1996.
8. M. Křížek and P. Neittaanmäki. Mathematical and numerical modelling in electrical engineering: Theory and applications. Kluwer Academic Publishers, Dordrecht, 1996. With a foreword by I. Babuška.
9. V. Arnăutu and P. Neittaanmäki. Optimal control from theory to computer programs. Kluwer, Dordrecht, 2003.
10. P. Neittaanmäki and S. Repin. Reliable methods for computer simulation: Error control and a posteriori estimates, volume 33 of Studies in Mathematics and Its Applications. Elsevier Science, Amsterdam, 2004.
11. P. Neittaanmäki, J. Sprekels, and D. Tiba. Optimization of elliptic systems: Theory and applications. Springer, Berlin, 2006.
12. A. Kravchuk and P. Neittaanmäki. Variational and quasi-variational inequalities in mechanics. Springer, Berlin, 2007.

13. N. V. Banichuk and P. J. Neittaanmäki. Structural optimization with uncertainties, volume 162 of *Solid Mechanics and Its Applications*. Springer, Berlin, 2010.
14. O. Mali, P. Neittaanmäki, and S. Repin. Accuracy verification methods: Theory and algorithms, volume 32 of *Computational Methods in Applied Sciences*. Springer, Berlin, 2014.
15. N. Banichuk, J. Jeronen, P. Neittaanmäki, T. Saksa, and T. Tuovinen. Mechanics of moving materials, volume 207 of *Solid Mechanics and Its Applications*. Springer, Berlin, 2014.
16. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Spline and spline wavelet methods with applications to signal and image processing. Vol. I. Periodic splines. Springer, Berlin, 2014.
17. L. Baskin, P. Neittaanmäki, B. A. Plamenevskii, and O. Sarafanov. Resonant tunneling: Quantum waveguides of variable cross-section, asymptotics, numerics, and applications. Springer, Cham, 2015.
18. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Spline and spline wavelet methods with applications to signal and image processing. Vol. II. Non-periodic splines. Springer, Cham, 2016.

## C2 Edited book, conference proceedings or special issue of a journal

1. P. Neittaanmäki, editor. Proceedings of the Summer School in Numerical Analysis at Jyväskylä, number 31 in *Ber. Univ. Jyväskylä Math. Inst.*, 1985.
2. J. Hallikas, M.-L. Kanervirta, and P. Neittaanmäki, editors. Numeeriset simulointimallit (Numerical simulation models), number 80 in *VTT-Symposium*, 1987. (Mainly in Finnish).
3. P. Neittaanmäki, editor. Proceedings of the Minisymposium on Numerical Methods for Semiconductors and Magnets (Jyväskylä, 1988), number 42 in *Ber. Univ. Jyväskylä Math. Inst.*, 1988.
4. P. Neittaanmäki, editor. Finite element method in simulation (Jyväskylä, 1990). Number R07/90 in *CSC Research Reports*. Center for Scientific Computing, Espoo, 1990.
5. P. Neittaanmäki, editor. Numerical methods for free boundary problems (Jyväskylä, 1990), number 99 in *International Series of Numerical Mathematics*, Basel, 1991. Birkhäuser.

6. J. Kinnunen and P. Neittaanmäki, editors. Tietokoneavusteinen matematiikka (Computer Aided Mathematics) (Jyväskylä, 1991), number 53 in Ber. Univ. Jyväskylä Math. Inst., 1992. (Mainly in Finnish).
7. P. Neittaanmäki, editor. Proceedings of the Workshop on Optimization and Optimal Control (Jyväskylä, 1992), number 58 in Ber. Univ. Jyväskylä Math. Inst., 1993.
8. P. Neittaanmäki and V. Rivkind, editors. Jyväskylä–St. Petersburg Seminar on Partial Differential Equations and Numerical Methods (Jyväskylä, 1993), number 56 in Ber. Univ. Jyväskylä Math. Inst., 1993.
9. P. Neittaanmäki, editor. Industrial Mathematics, Selected lectures presented in Finnish Mathematicians Days 11.–12.1.1993, number 1 in Reports on Applied Mathematics and Computing. University of Jyväskylä, Department of Mathematics, 1993.
10. M. Křížek, P. Neittaanmäki, and R. Stenberg, editors. Finite element methods. Fifty years of the Courant element (Jyväskylä, 1993), number 164 in Lecture Notes in Pure and Applied Mathematics, New York, 1994. Marcel Dekker.
11. R. A. E. Mäkinen and P. Neittaanmäki, editors. Proceedings of the 5th Finnish Mechanics Days, number 3 in Report Series. University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1994.
12. M. Křížek, P. Neittaanmäki, and R. Stenberg, editors. Finite element methods: Superconvergence, postprocessing and a posteriori estimates (Jyväskylä, 1996), number 196 in Lecture Notes in Pure and Appl. Math., New York, 1998. Marcel Dekker.
13. K. Miettinen, M. M. Mäkelä, P. Neittaanmäki, and J. Périaux, editors. Evolutionary algorithms in engineering and computer science. Recent advances in genetic algorithms, evolution strategies, evolutionary programming, genetic programming and industrial applications, Chichester, 1999. J. Wiley & Sons.
14. P. Neittaanmäki and L. Rivkind, editors. Analysis and approximation of boundary value problems. A memorial meeting dedicated to Prof. Valery Rivkind, number B8/2000 in Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing. University of Jyväskylä, 2000.
15. P. Neittaanmäki, T. Tiihonen, and P. Tarvainen, editors. Numerical mathematics and advanced applications (ENUMATH 99, Jyväskylä), River Edge, NJ, 2000. World Scientific.

16. M. Křížek and P. Neittaanmäki, editors. Finite element methods. Three-dimensional problems (Jyväskylä, 2000), number 15 in GAKUTO International Series. Mathematical Sciences and Applications, Tokyo, 2001. Gakkōtoshō.
17. G. C. Cohen, E. Heikkola, P. Joly, and P. Neittaanmäki, editors. Mathematical and Numerical Aspects of Wave Propagation (WAVES 2003, Jyväskylä), Berlin, 2003. Springer.
18. E. Heikkola, Yu. Kuznetsov, P. Neittaanmäki, and O. Pironneau, editors. Numerical methods for scientific computing. Variational problems and applications, Barcelona, 2003. CIMNE. Dedicated to Dr. Jacques Périaux on the occasion of his 60th birthday.
19. M. Křížek, P. Neittaanmäki, R. Glowinski, and S. Korotov, editors. Conjugate gradient algorithms and finite element methods: A half-century of contributions to scientific computing, Berlin, 2004. Springer.
20. P. Neittaanmäki, T. Rossi, K. Majava, and O. Pironneau, editors. Proc. of the 4th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol I. University of Jyväskylä, 2004. CD-ROM.
21. P. Neittaanmäki, T. Rossi, S. Korotov, E. Oñate, J. Périaux, and D. Knörzer, editors. Proc. of the 4th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2004, Jyväskylä), Vol II. University of Jyväskylä, 2004. CD-ROM.
22. M. Kankaanranta, P. Neittaanmäki, and P. Häkkinen, editors. Digitaalisten pelien maailmoja (Digital games' worlds). University of Jyväskylä, 2004. (In Finnish).
23. P. Neittaanmäki, J. Périaux, and T. Tuovinen, editors. Evolutionary and deterministic methods for design, optimization and control: Applications to industrial and societal problems (EUROGEN 2007, Jyväskylä), Barcelona, 2008. CIMNE.
24. R. Glowinski and P. Neittaanmäki, editors. Partial differential equations: Modelling and numerical simulation, number 16 in Computational Methods in Applied Sciences, Berlin, 2008. Springer.
25. M. Kankaanranta and P. Neittaanmäki, editors. Design and use of serious games, number 37 in Intelligent Systems, Control and Automation: Science and Engineering, Dordrecht, 2009. Springer.

26. P. Neittaanmäki and K. Miettinen, editors. IFAC Workshop on Control Applications of Optimisation. IFAC, 2009. CD-ROM.
27. R. Mäkinen, P. Neittaanmäki, T. Tuovinen, and K. Valpe, editors. Proceedings of the 10th Finnish Mechanics Days, number A1/2009 in Reports of the Department of Mathematical Information Technology, Series A, Collections. University of Jyväskylä, 2009. (Partially in Finnish).
28. W. Fitzgibbon, Yu. Kuznetsov, P. Neittaanmäki, J. Périaux, and O. Pironneau, editors. Applied and numerical partial differential equations: Scientific computing in simulation, optimization and control in a multidisciplinary context, volume 15 of Computational Methods in Applied Sciences, Berlin, 2010. Springer.
29. W. Fitzgibbon, Y. Kuznetsov, P. Neittaanmäki, and O. Pironneau, editors. Modeling, simulation and optimization for science and technology, volume 34 of Computational Methods in Applied Sciences, Dordrecht, 2014. Springer.
30. M. Lehto and P. Neittaanmäki, editors. Cyber security: Analytics, technology and automation, volume 78 of Intelligent Systems, Control and Automation: Science and Engineering, Dordrecht, 2015. Springer.
31. P. Neittaanmäki, S. Repin, and T. Tuovinen, editors. Mathematical modeling and optimization of complex structures, volume 40 of Computational Methods in Applied Sciences, Dordrecht, 2016. Springer. doi: 10.1007/978-3-319-23564-6.

## D Publications intended for professional communities

### D1 Article in a trade journal

1. P. Neittaanmäki. Epälineaarisen optimoinnin ohjelmistoista (On software for NLP). Korkeakoulujen ATK-uutiset, 3:21–23, 1983.
2. P. Neittaanmäki. Lappeenrannan teknillinen korkeakoulu CAE kehityksessä uuteen aikakauteen (CAE in Lappeenranta University of Technology). Koneterva, 1:9–11, 1984/85.
3. P. Neittaanmäki and R. Rask. Taloushallinnon mikrotietokoneohjelmistot rynnistävät yrityksiin (Microcomputers rush into the enterprises). Talousratas, 1:20–23, 1985.

4. P. Neittaanmäki. Tietotekniikan diplomi-insinöörien koulutus LTKK:ssa (Information technology education in Lappeenranta University of Technology). LTKK:n tiedotuslehti, 3:2–5, 1985.
5. P. Neittaanmäki. FEM: high tech -työkalu (FEM: a high tech tool). Energiäisku, joulukuu 1985.
6. R. Nieminen, J. Korppi-Tommola, P. Neittaanmäki, V. Savolainen, and P. Pakarinen. Yliopiston ja ympäristön yhteistyön kehittäminen (Development of the cooperation between university and its environments). Jyväskylän yliopiston hallintoviraston julkaisuja 20, 1985.
7. P. Neittaanmäki, M. Mäkelä, and S. Parviainen. Asiantuntijajärjestelmät valtaavat alaa myös optimoinnissa (Expert systems in optimization). Korkeakoulujen ATK-uutiset, 3:17–19, 1986.
8. P. Neittaanmäki. Tietokoneavusteisen tekniikan (CAE) kehittyvät menetelmät (On new methods of CAE). In Teollisuusmatematiikan päivät, raportti. Lahden tutkimus- ja koulutuskeskus, Helsingin yliopisto, 1986. (in Finnish).
9. P. Neittaanmäki. Henkilöresursseja ja käyttäjäkoulutusta kehitettävä laiteinvestointien kanssa tasapainossa. Korkeakoulujen ATK-uutiset, 2:12–14, 1987.
10. P. Neittaanmäki and M. Mäkelä. Symbolinen laskenta koulumatematiikan opetuksessa. Dimensio, 5:55–57, 1987.
11. R. Nieminen and P. Neittaanmäki. Korkeakoulujen välisen yhteistyön kehittäminen. SITRA tiedottaa, 4, 1988.
12. P. Neittaanmäki. Tietotekniikka matematiikan koulutusohjelmassa (Computer science at University of Jyväskylä, Department of Mathematics). Arkhimedes, 1:59–63, 1990.
13. P. Neittaanmäki. Ajatuksia matematiikan opettajakoulutuksesta. In S. Hämäläinen, E. Laine, M.-K. Lukkanen, P. Liikanen, and L. Ruokonen, editors, Opettajakoulutuksen uusia ulottuvuuksia, number 24 in Katsauksia, pages 267–272. Jyväskylän yliopisto, Opettajankoulutuslaitos, 1990.
14. P. Neittaanmäki. Koulutus on tärkeä osa myös maaseudun kehittämisestä. Maa-Tieto-Tulevaisuus -lehti, 1.3.1990.
15. P. Neittaanmäki. Computed aided optimal structural design. In High Technology in Finland 1991, pages 48–49. The Finnish Academy of Technology, Helsinki, 1990.



16. P. Neittaanmäki. Uusi avaus kansainväliseen korkeakouluopiskeluun, Jyväskylän yliopiston kesäkampus. *Korkeakoulutieto*, 18:35–38, 1991.
17. P. Neittaanmäki. Luonnontieteiden koulutus uudistuksen edessä. *Jyväskylän yliopiston tiedotuslehti*, 16, 1991.
18. P. Neittaanmäki. Luonnontieteellisen koulutuksen arviointi ja kehittäminen. *Fysiikka tänään*, 4:14–16, 1991.
19. P. Neittaanmäki. Luonnontieteellisen koulutuksen kehittäminen. *Dimensio*, 8:15–17, 1991.
20. P. Neittaanmäki. Uusi avaus kansainväliseen korkeakouluopiskeluun, Jyväskylän yliopiston kesäkampus. In *Jyväskylän yliopisto. Toimintakertomus*, pages 20–23. 1991.
21. P. Neittaanmäki. Yliopisto aktiivisesti mukana eurooppalaisissa tutkimushankkeissa (The European dimension in research). In *Jyväskylän yliopisto. Toimintakertomus*, pages 22–23. 1993.
22. P. Neittaanmäki. Numeerinen analyysi – linkki matematiikan ja tietotekniikan välillä. *Arkhimedes*, 4:350–355, 1993. Virkaanastujaisesityelmä 20.10.1993.
23. P. Neittaanmäki and R. A. E. Mäkinen. Numerical analysis and scientific computing in Jyväskylä. *CSC News*, 6:8–10, 1994.
24. P. Neittaanmäki. Yliopisto-opiskelu uuteen aikakauteen. *Tieteentekijä (Forskarforum)*, 7:10–11, 1994.
25. P. Neittaanmäki. Yliopistot uuteen tutkintojärjestelmään: Kohti yksilöllisiä vaihtoehtoja. *Opettaja*, 36:26–27, 1994.
26. P. Neittaanmäki. Tohtoritavoitteet on saavutettu. *Tieteentekijä (Forskarforum)*, 3:12–14, 1995.
27. P. Neittaanmäki. Tohtorit Suomen strateginen voimavara. *Korkeakoulutieto*, 4:33–35, 1995.
28. P. Neittaanmäki. Tavoitteet ensi vuosituksella. *Tiedin*, 1, 1995.
29. P. Neittaanmäki. Opinnäytteistä hyöty ympäröivälle yhteisölle. *Tiedin*, 2, 1995.
30. P. Neittaanmäki. Uutta koulutusta avain- ja kasvualoille. *Tiedonjyvä*, 11, 1995.
31. P. Neittaanmäki. Opettajankoulutus – yhteinen haasteemme. *Tiedonjyvä*, 15, 1995.

32. P. Neittaanmäki. Voidaanko korkeakoulujen hyvyttä mitata. *Tiedonjyvä*, 17, 1995.
33. P. Neittaanmäki. Keski-Suomi panostaa koulutukseen. In *Elinvoimaa Keski-Suomeen*, pages 6–7. Keski-Suomen Liitto, 1995.
34. P. Neittaanmäki. Raportti vuosina 1973–1992 valmistuneista tohtoreista. *Jyväskylän yliopiston hallintoviraston julkaisuja* 46, 1995.
35. P. Neittaanmäki. Aineenopetuksen resurssit saatava tehokäyttöön. *Tiedonjyvä*, 1:12–13, 1996.
36. P. Neittaanmäki. Tutkimustietoa alueohjelmien toteutukseen. *Tiedonjyvä*, 2:8–9, 1996.
37. P. Neittaanmäki. Opettajankoulutuksen kehittämisestä. *Dimensio*, 2:9–13, 1996.
38. P. Neittaanmäki. Yritysten akateemisen maailman vuorovaikutuksesta. *Automaatioväylä*, 5, 1996.
39. P. Neittaanmäki. Matematiikan asema korostuu teknologian aikakaudella. *Korkeakoulujen ATK-uutiset*, 3, 1996.
40. P. Neittaanmäki. Lääkkeitä luonnontieteiden opettajankoulutukseen. *Korkeakoulutieto*, 3:69–72, 1996.
41. P. Neittaanmäki. Katse vuoteen 2010. *Tiedonjyvä*, 8, 1996.
42. P. Neittaanmäki. Yritysten ja akateemisen maailman vuorovaikutuksesta. *Yliopistotieto*, 1:36–40, 1997.
43. P. Neittaanmäki. Minustako tohtori? *Tiedin*, 1, 1997.
44. P. Neittaanmäki. Ainutlaatuinen koulutuskokonaisuus. *Täsmää-lehti*, 1, 1997.
45. P. Neittaanmäki. Monipuolistuvat ja monikanavaistuvat valinnat. *Yliopistotieto*, 3:32–35, 1997.
46. P. Neittaanmäki. Suomen tutkimuspanostus nousee maailman huipulle. *Tieteessä tapahtuu*, 3:3–4, 1997.
47. P. Neittaanmäki. Yliopistolaki ja yliopistojen kehittäminen. *Tiedepolitiikka*, 2/98, 1998.
48. P. Neittaanmäki. Tekniikan alan koulutusta tulee laajentaa. *Tiedepolitiikka*, 4/02:53–55, 2002.
49. P. Neittaanmäki. Matematiikka, vähän hyödynnetty voimavara. *Prima*, 4, 2005.

50. P. Neittaanmäki. Bridging the gap between humanity and technology. *eStrategies Projects*, pages 46–47, December 2007.
51. P. Neittaanmäki, R. Neittaanmäki, T. Tiihonen, and J. Ärje. Yliopistojen tutkintokoulutuksen ja tutkimuksen rahoitus ja tulokset vuosina 2000–2004 ja 2005–2009. *Tiedepolitiikka*, 2/2010:41–46.
52. S. Mönkölä, T. Airaksinen, P. Makkonen, T. Tuovinen, and P. Neittaanmäki. Prospectives to tractor cabin design with computational acoustics tools. *ECMI Newsletter*, 49:16–19, 2011. <http://www.mafy.lut.fi/EcmiNL/issues.php?action=viewart&ID=225>.

## D2 Article in a professional manual or guide or professional information system, textbook material

1. P. Neittaanmäki. Informaatiotekniikan tutkimus. In *Suomen tieteen tila ja taso. Luonnontieteen ja tekniikan tutkimus 2*, number 10/97 in *Suomen Akatemian julkaisuja*, pages 39–91. Edita, Helsinki, 1997.
2. P. Neittaanmäki. Tohtorit ja työelämä. In Pentti Kauranen, editor, *Vuosikirja 1997*, pages 127–133. *Suomalainen Tiedeakatemia (Academia Scientiarum Fennica)*, Helsinki, 1998. *Doctorates and working life, Year Book 1997, Resumé*, pp. 73–74.

## D3 Professional conference proceedings

1. P. Neittaanmäki. Tietotekniikka Lappeenrannan teknillisessä korkeakoulussa (Information technology in Lappeenranta University of Technology). In *Itä-Suomen Tiedepäivät, Kuopio*, number 2 in *Publications of the University of Kuopio, Administration*, pages 11–15, 1985. (In Finnish).
2. P. Neittaanmäki. CAE-tietokoneavusteinen tekniikka (CAE-computer aided engineering). In *Itä-Suomen Tiedepäivät, Kuopio*, number 2 in *Publications of the University of Kuopio, Administration*, pages 38–42, 1985. (In Finnish).
3. P. Neittaanmäki. Matemaattiset työkaluohjelmistot (Prepackaged math). In *Tietokoneavusteinen matematiikka (Computer Aided Mathematics) (Jyväskylä, 1991)*, number 53 in *Ber. Univ. Jyväskylä Math. Inst.*, pages 73–78, 1992. (In Finnish).
4. P. Neittaanmäki. Tietotekniikka ja tuotekehitys oleellinen osa suomalaista yhteiskuntaa vuonna 2000. In T. Viitasalo et al., editor, *Urheilu ja tietotekniikka. Kongressi 17.–19.4.1998 Jyväskylä. Kilpa- ja huippu-urheilun tutkimuskeskus, Jyväskylä*, 1998.

5. P. Neittaanmäki ja M. Kankaanranta. Agora Game Labia rakentamassa. In M. Kankaanranta and P. Neittaanmäki ja P. Häkkinen, editors, Digitaalisten pelien maailmoja. Jyväskylän yliopisto, 2004.

#### D4 Published development or research report or study

1. P. Neittaanmäki. EMP-ilmiöstä ja suojautumiselta sen vaikutuksilta (On the nuclear electromagnetic pulse (EMP) and protection principles). Technical report, Ilmavoimien Esikunta, 1981. (In Finnish, English summary).
2. P. Neittaanmäki. Viestiaseman EMP-suojauksesta (On the EMP-protection principle for a signal station). Technical report, Ilmavoimien Esikunta, 1981. (In Finnish).
3. M. Hamina, P. Neittaanmäki, and J. Saranen. A least square FE-method for ideal fluid problems. Ber. Univ. Jyväskylä Math. Inst. 24, 1981. MR 84a:65091.
4. J. Haslinger and P. Neittaanmäki. Finite element methods for approximating the gradient of the solution to Helmholtz's equation. Research report 2, Lappeenranta University of Technology, Department of Physics and Mathematics, 1982.
5. M. Hamina and P. Neittaanmäki. A semiautomatic triangulation procedure for the use of finite elements. Research report 3, Lappeenranta University of Technology, Department of Physics and Mathematics, 1982.
6. P. Neittaanmäki and T. Tiihonen. Optimal shape design of systems governed by a unilateral boundary value problem. Research report 4, Lappeenranta University of Technology, Department of Physics and Mathematics, 1982.
7. P. Neittaanmäki and D. Tiba. A finite element approximation of the boundary control of two-phase Stefan problems. Research report 4, Lappeenranta University of Technology, Department of Physics and Mathematics, 1983.
8. P. Neittaanmäki and T. Tiihonen. Sorvipöllin keskilinjan määrääminen; neljän eri menetelmän vertailu (Definition of a midline of the lathe log: comparison between four methods). Sisäinen tutkimusraportti, W. Schauman Oy, 1983. (In Finnish).
9. P. Neittaanmäki. Optimaalisen muodon probleema (On optimal shape). In S. K. Kivelä and O. Nevanlinna, editors, Matemaatikkopäivät 1983, Osa 1, Report-Mat-C3, pages 36–51. HTKK, 1983. (In Finnish).

10. M. Křížek and P. Neittaanmäki. A phenomenon arising from the use of harmonic and biharmonic elements. Research report 5, Lappeenranta University of Technology, Department of Physics and Mathematics, 1984.
11. M. Křížek and P. Neittaanmäki. On a global superconvergence recovery technique for the gradient from piecewise linear FE-approximations. Preprint 33, University of Jyväskylä, Department of Mathematics, 1984.
12. P. Neittaanmäki and E. Laitinen. Lämpötilajakauma jatkuvavalussa ja sen säätäminen (Temperature distribution in continuous casting, and its control). Tutkimusraportti 10, Lappeenrannan teknillinen korkeakoulu, Yleis­tentieteiden laitos, 1984. (In Finnish).
13. C. Marinov and P. Neittaanmäki. The problem of response time in electrical circuits with resistively coupled distributed structures. Research report 8, Lappeenranta University of Technology, Department of Physics and Mathematics, 1985.
14. P. Neittaanmäki and K. Vaittiniemi. Kumilaatan FEM-analyysi (FEM analysis for rubber plate). Tutkimusraportti 12, Lappeenrannan teknillinen korkeakoulu, Yleis­tentieteiden laitos, 1985. (In Finnish).
15. J. Hiironen, J. Reunanen, S. Parviainen, P. Neittaanmäki, and S. Palosaari. Optimointi ja epälineaaristen yhtälöryhmien ratkaisu (Optimization and solving of nonlinear system of equations). Report 8, Lappeenranta University of Technology, Department of Chemical Engineering, 1985. (In Finnish).
16. P. Neittaanmäki and E. Laitinen. Determination of water heat transfer coefficients and their control in continuous casting of steel billets. In J. Pesari and E. Vakkilainen, editors, Proc. of Lappeenranta Second School on Heat Transfer, 12.–16.8.1985, Research report EN D–3, Part C. Lappeenranta University of Technology, Department of Energy Technology, 1985.
17. P. Neittaanmäki and T. Tiihonen. Sensitivity analysis for a class of optimal shape design problems. Ber. Univ. Jyväskylä Math. Inst. 29, 1985.
18. E. Laitinen, T. Männikkö, and P. Neittaanmäki. Toisiojähdytyksen dynaamisen ohjausmallin kehittäminen (On the dynamic control of secondary cooling). Research report 1, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986. (In Finnish).
19. J. Haslinger, P. Neittaanmäki, A. Kaarna, and T. Tiihonen. Optimal shape control of the domain in unilateral boundary value problems. Part I. Abstract setting and Dirichlet–Signorini problem. Research report 5, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986.

20. J. Haslinger, P. Neittaanmäki, A. Kaarna, and T. Tiihonen. Optimal shape control of the domain in unilateral boundary value problems. Part II. Design of an elastic body in contact with rigid support. Research report 6, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986.
21. C. A. Marinov and P. Neittaanmäki. Asymptotic stability of a class of parabolic equations arising in circuit theory. Preprint 43, University of Jyväskylä, Department of Mathematics, 1986.
22. C. A. Marinov and P. Neittaanmäki. On bounds evaluation and numerical approach in delay time problems. Research report 8, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986.
23. C. A. Marinov and P. Neittaanmäki. Asymptotic behavior of a parabolic problem with nonlinear boundary conditions. Research report 9, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986.
24. J. Katainen, E. Laitinen, T. Männikkö, and P. Neittaanmäki. Toisiojäähdytyksen dynaamisen ohjausmallin kehittäminen, osa II (On the dynamic control of secondary cooling, part II). Research report 15, Lappeenranta University of Technology, Department of Physics and Mathematics, 1986. (In Finnish).
25. J. Katainen, E. Laitinen, T. Männikkö, and P. Neittaanmäki. Jatkuvavalun toisiojäähdytyksen simulointi- ja ohjausmallit (On the simulation and control of secondary cooling of continuous casting). JV-projektin väliraportti, Tekes, 1987. (In Finnish).
26. H. Törmä, M. Mäkelä, and P. Neittaanmäki. Yleisen tasapainon veromallit ja optimoinnin asiantuntijajärjestelmä EMP (The tax models of general equilibrium and EMP, the expert system for optimization). Keskusteluaiheita (ETLA working papers series) 247, Elinkeinoelämän tutkimuslaitos, 1987. (In Finnish).
27. G. Arumugam, P. Neittaanmäki, and K. Salmenjoki. Sensitivity analysis for the design of an electromagnet. Preprint 82, University of Jyväskylä, Department of Mathematics, 1988.
28. D. Tiba, P. Neittaanmäki, and R. Mäkinen. Controllability-type properties for elliptic systems and applications. Preprint 120, University of Jyväskylä, Department of Mathematics, 1990.

29. D. Tiba, P. Neittaanmäki, and R. Mäkinen. A fixed domain approach in an optimal shape design problem. Preprint 121, University of Jyväskylä, Department of Mathematics, 1990.
30. Yu. A. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Overlapping block relaxation and Schwarz methods for the obstacle problem with a convection-diffusion operator. Report 4/93, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1993.
31. Yu. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Overlapping domain decomposition methods for obstacle problems with monotone operators. Preprint 158, University of Jyväskylä, Department of Mathematics, 1993.
32. E. Heikkola, Yu. Kuznetsov, P. Neittaanmäki, and J. Toivanen. Numerical studies of different approximations to the Sommerfeldt condition: Part I. Report 4/95, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1995.
33. E. Heikkola, Yu. Kuznetsov, P. Neittaanmäki, and J. Toivanen. Numerical studies of different approximations to the Sommerfeldt condition: Part II. Report 11/95, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1995.
34. Yu. Kuznetsov, P. Neittaanmäki, and P. Tarvainen. Iterative methods for complementarity problems arising from obstacle problems with convection-diffusion operators. Report 17/95, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1995.
35. I. Erunova and P. Neittaanmäki. Convergence estimates for approximation of the steady flow of liquid and gas over a solid. Report 18/97, University of Jyväskylä, Department of Mathematics, Laboratory of Scientific Computing, 1997.
36. P. Neittaanmäki and D. Tiba. Shape optimization in free boundary systems. Preprint 534, Weierstrass-Institut für Angewandte Analysis und Stochastik, Berlin, 1999.
37. S. Korotov and M. Křížek and P. Neittaanmäki. Weakened acute type condition for tetrahedral triangulations and the discrete maximum principle. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B11/1999, University of Jyväskylä, Jyväskylä, 1999.
38. P. Auvinen, N. Banichuk, M. M. Mäkelä, J. Mäkinen, P. Neittaanmäki, and V. Saurin. Modelling and design sensitivity analysis for crane structures.

- Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B3/2000, University of Jyväskylä, Jyväskylä, 2000.
39. N. Banichuk, M. M. Mäkelä, J. Mäkinen, P. Neittaanmäki, V. Saurin, and A. Sinitsyn. Some applications of optimization techniques to loader crane design. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B4/2000, University of Jyväskylä, Jyväskylä, 2000.
  40. L. Barbu, G. Moroşanu, and P. Neittaanmäki. On some singularly perturbed nonlinear boundary value problems. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B8/2000, University of Jyväskylä, Jyväskylä, 2000.
  41. P. Auvinen, N. Banichuk, M. M. Mäkelä, J. Mäkinen, P. Neittaanmäki, and V. Saurin. 3D optimization of loader crane structures under strength, rigidity and longevity conditions. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B16/2000, University of Jyväskylä, Jyväskylä, 2000.
  42. P. Auvinen, N. Banichuk, M. M. Mäkelä, J. Mäkinen, P. Neittaanmäki, and V. Saurin. Efficiency analysis of crane systems optimization. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B3/2001, University of Jyväskylä, Jyväskylä, 2001.
  43. P. Auvinen, N. Banichuk, M. M. Mäkelä, P. Neittaanmäki, and V. Saurin. Optimal structural design using discrete set of materials. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B4/2001, University of Jyväskylä, Jyväskylä, 2001.
  44. M. Frolov, P. Neittaanmäki, and S. Repin. On the reliability, effectivity and robustness of a posteriori error estimation methods. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B14/2002, University of Jyväskylä, Jyväskylä, 2002.
  45. M. Dementieva, P. Neittaanmäki, and V. Zakharov. Minimal reduction and time-consistency. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B11/2003, University of Jyväskylä, Jyväskylä, 2003.
  46. S. Matioukevitch and P. Neittaanmäki. The nonstationary Maxwell system with inhomogeneous boundary conditions in domains with conical points. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B5/2004, University of Jyväskylä, Jyväskylä, 2004.



47. L. M. Baskin, P. Neittaanmäki, B. A. Plamenevskii, and A. A. Pozharskii. On electron transport in 3D quantum waveguides of variable cross-section. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B14/2005, University of Jyväskylä, Jyväskylä, 2005.
48. L. M. Baskin, P. Neittaanmäki, B. A. Plamenevskii, and A. A. Pozharskii. Control of the low temperature thermal conductance of deformed nanofibers. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B8/2006, University of Jyväskylä, Jyväskylä, 2006.
49. P. Neittaanmäki and D. Tiba. A fixed domain approach in shape optimization problems with Neumann boundary conditions. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B12/2006, University of Jyväskylä, Jyväskylä, 2006.
50. N. V. Banichuk and P. Neittaanmäki. On structural optimization with incomplete information. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B13/2006, University of Jyväskylä, Jyväskylä, 2006.
51. P. Neittaanmäki, A. Pennanen, and D. Tiba. Fixed domain approaches in shape optimization problems with Dirichlet boundary conditions. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B16/2007, University of Jyväskylä, Jyväskylä, 2007.
52. N. Banichuk and P. Neittaanmäki. On the transverse vibrations analysis of traveling membranes and plates submerged into ideal fluid. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B2/2008, University of Jyväskylä, Jyväskylä, 2008.
53. N. Banichuk and P. Neittaanmäki. On application of the Galerkin method and perturbation techniques for vibration analysis of a moving web submerged into ideal fluid. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B3/2008, University of Jyväskylä, Jyväskylä, 2008.
54. N. Banichuk and P. Neittaanmäki. Instability analysis for traveling paper web interacting with surrounding air. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B4/2008, University of Jyväskylä, Jyväskylä, 2008.
55. L. Baskin, P. Neittaanmäki, B. Plamenevsky, and O. Sarafanov. Asymptotic description of resonant tunneling in quantum wires of variable cross-section.

- Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B7/2008, University of Jyväskylä, Jyväskylä, 2008.
56. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. Nonstationary dynamics of travelling membranes and plates interacting with axially moving ideal fluid. Part I: Theory. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B11/2008, University of Jyväskylä, Jyväskylä, 2008.
  57. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. Nonstationary dynamics of travelling membranes and plates interacting with axially moving ideal fluid. Part II: Numerical results. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B12/2008, University of Jyväskylä, Jyväskylä, 2008.
  58. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. Instability analysis for traveling membranes and plates interacting with surrounding ideal fluid. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B13/2008, University of Jyväskylä, Jyväskylä, 2008.
  59. N. Banichuk, S. Yu. Ivanova, A. S. Kravchuk, and P. Neittaanmäki. Discrete-continual computational modeling of contact interaction of elastic body and coating on macro and nanometer scale. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B17/2008, University of Jyväskylä, Jyväskylä, 2008.
  60. P. Neittaanmäki and O. Sarafanov. Asymptotic theory of resonant tunneling in three-dimensional quantum waveguides of variable cross-section. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B22/2008, University of Jyväskylä, Jyväskylä, 2008.
  61. N. Banichuk, J. Jeronen, P. Neittaanmäki, and T. Tuovinen. On the instability of an axially moving elastic plate. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B23/2008, University of Jyväskylä, Jyväskylä, 2008.
  62. P. Neittaanmäki, T. Tiihonen, R. Mäkinen, T. Rossi, T. Tuovinen, A. Kaihlavirta, R. Hietaniemi, and E. Marttila. Laskennallisten tieteiden kansallinen kehittäminen 2009: Nykytilan kartoitus (National development of computational sciences 2009: Mapping of the present state). Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B6/2009, University of Jyväskylä, Jyväskylä, 2009. (In Finnish).

63. N. Banichuk, J. Jeronen, P. Neittaanmäki, T. Tuovinen, and T. Saksa. Theoretical study on travelling web dynamics and instability under a linear tension distribution. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B1/2010, University of Jyväskylä, Jyväskylä, 2010.
64. A. Averbuch, T. Kärkkäinen, P. Neittaanmäki, P. Nieminen, N. Rabin, and V. Zheludev. Applications of dimension reduction, classification, and neural prediction for industrial process data. Reports of the Department of Mathematical Information Technology, Series C, Software and Computational Engineering C4/2010, University of Jyväskylä, Jyväskylä, 2010.
65. P. Neittaanmäki, T. Tiihonen, R. Mäkinen, T. Rossi, T. Tuovinen, I. Pölönen, A. Kaihlavirta, H. Neittaanmäki, and A. Melén. Laskennallinen tiede – Tieteen kolmas menetelmä – Tilannekatsaus 2011 (Computational science – Third method of science – Snapshot 2011). Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B7/2011, University of Jyväskylä, Jyväskylä, 2011.
66. N. Banichuk, M. Kurki, P. Neittaanmäki, T. Saksa, and T. Tuovinen. On axially moving webs under fracture and instability constraints. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B8/2011, University of Jyväskylä, Jyväskylä, 2011.
67. N. Banichuk, M. Kurki, P. Neittaanmäki, T. Saksa, M. Tirronen, and T. Tuovinen. Optimization of axially moving webs subjected to instability and fracture. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B9/2011, University of Jyväskylä, Jyväskylä, 2011.
68. P. Neittaanmäki, S. Repin, and J. Valdman. Functional a posteriori error estimates for elastic problems with nonlinear boundary conditions. Preprint 13, Max-Planck-Institut für Mathematik in den Naturwissenschaften, Leipzig, 2011.
69. S. Matculevich, P. Neittaanmäki, and S. Repin. Guaranteed error bounds for a class of Picard-Lindelöf iteration methods. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B1/2012, University of Jyväskylä, Jyväskylä, 2012.
70. N. Banichuk, P. Neittaanmäki, T. Saksa, M. Tirronen, and T. Tuovinen. Pareto optimal solutions for good runnability of moving bands. Reports of

the Department of Mathematical Information Technology, Series B, Scientific Computing B2/2012, University of Jyväskylä, Jyväskylä, 2012.

71. L. Baskin, M. Kabardov, P. Neittaanmäki, B. Plamenevsky, and O. Sarafanov. Asymptotic and numerical studies of resonant tunneling in 2D quantum waveguides of variable cross-section. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B4/2012, University of Jyväskylä, Jyväskylä, 2012.
72. L. Baskin, M. Kabardov, P. Neittaanmäki, B. Plamenevsky, and O. Sarafanov. Asymptotic theory of electron flow spin-polarization in 2d waveguides of variable cross-section in the presence of magnetic field. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B5/2012, University of Jyväskylä, Jyväskylä, 2012.
73. L. Baskin, M. Kabardov, and P. Neittaanmäki. Multichannel scattering in 2d quantum waveguides of variable cross-section. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B6/2012, University of Jyväskylä, Jyväskylä, 2012.
74. K. Fukuda, C. Watanabe, and P. Neittaanmäki. Changes in consumption effects on economic growth: Implications for the eurozone crisis. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B9/2012, University of Jyväskylä, Jyväskylä, 2012.
75. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Spline-based frames in the space of periodic signals. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B10/2012, University of Jyväskylä, Jyväskylä, 2012.
76. A. Averbuch, P. Neittaanmäki, and V. Zheludev. Periodic discrete-time frames: Design and applications for image restoration. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B11/2012, University of Jyväskylä, Jyväskylä, 2012.
77. P. Neittaanmäki and S. Repin. Two-sided guaranteed estimates of the cost functional for optimal control problems with elliptic state equations. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B1/2013, University of Jyväskylä, Jyväskylä, 2013.
78. A. Averbuch, P. Neittaanmäki, G. Shabat, and V. Zheludev. Splines computation by subdivision and sample rate conversion. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B2/2013, University of Jyväskylä, Jyväskylä, 2013.

79. N. Banichuk, S. Ivanova, P. Neittaanmäki, and T. Tuovinen. Uncertainties in the heat conduction problems and reliable estimates. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B4/2013, University of Jyväskylä, Jyväskylä, 2013.
80. V. Zheludev, I. Pölönen, N. Neittaanmäki-Perttu, A. Averbuch, M. Grönroos, P. Neittaanmäki, and H. Saari. Hyperspectral imaging based delineation of malignant tumors with framelets. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B8/2013, University of Jyväskylä, Jyväskylä, 2013.
81. H.-H. Puupponen, I. Pölönen, N. Neittaanmäki-Perttu, P. Neittaanmäki, M. Grönroos, and H. Saari. Technical report of spectral unmixing for the visual separation of skin abnormalities. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B9/2013, University of Jyväskylä, Jyväskylä, 2013.
82. N. Banichuk, A. Barsuk, P. Neittaanmäki, J. Jeronen, and T. Tuovinen. Bifurcation method of stability analysis and some applications. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B7/2014, University of Jyväskylä, Jyväskylä, 2014.
83. N. Banichuk, A. Barsuk, P. Neittaanmäki, J. Jeronen, and T. Tuovinen. An analytical-numerical study of dynamic stability of an axially moving elastic web. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B1/2015, University of Jyväskylä, Jyväskylä, 2015.
84. N. Banichuk, A. Barsuk, P. Neittaanmäki, J. Jeronen, and T. Tuovinen. On one algebraic bifurcation problem. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B2/2015, University of Jyväskylä, Jyväskylä, 2015.
85. N. Banichuk, S. Ivanova, J. Jeronen, E. Makeev, P. Neittaanmäki, and T. Tuovinen. A thermoelastic instability problem for axially moving plates. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B3/2016, University of Jyväskylä, Jyväskylä, 2016.
86. P. Neittaanmäki, M. Nokka, and S. Repin. A posteriori error bounds for approximations of the Stokes problem with friction type boundary conditions. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B5/2016, University of Jyväskylä, Jyväskylä, 2016.

87. C. Watanabe, K. Naveed, P. Neittaanmäki, and B. Fox. Consolidated challenge to social demand for resilient platforms – lessons from uber’s global expansion. Reports of the Department of Mathematical Information Technology, Series B, Scientific Computing B6/2016, University of Jyväskylä, Jyväskylä, 2016.

## D5 Textbook, professional manual or guide, dictionary

1. P. Neittaanmäki, M. Mäkelä, and S. Parviainen. Epälineaarinen optimointi (Nonlinear programming). Number 11 in Lecture Notes. University of Jyväskylä, Department of Mathematics, 1988. (In Finnish).
2. P. Neittaanmäki, editor. Matematiikan opetus (Teaching of Mathematics) (Matematiikkopäivät Jyväskylässä 11.–12.1.1993), number 24 in Lecture Notes. University of Jyväskylä, Department of Mathematics, 1993. (Mainly in Finnish).

## G Theses

### G1 Doctoral dissertation (monograph)

1. P. Neittaanmäki. Randwertaufgaben zur Plattengleichung. Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes, 16:71 pp., 1978. MR 80b:35065.

## H Patents and invention disclosures

### H1 Granted patent

1. P. Neittaanmäki, E. Laitinen, T. Miinalainen, P. Pakarinen, and J. Koskimies. Method for regularization and on-line measurement of the fibre orientation in a web produced by means of a paper machine. Patent number 81848, Finland, 1990.
2. P. Neittaanmäki, E. Laitinen, T. Miinalainen, P. Pakarinen, and J. Koskimies. Method and system for regulation and on-line measurement of the fibre orientation in a web produced by a paper machine. United States Patent, Patent number 5.827.399, October 1998.
3. L. M. Baskin, P. Neittaanmäki, B. A. Plamenevsky, and A. A. Pozharsky. Järjestely aaltojohdinhaarassa elektronivirran kanavoimiseksi ja vastaava menetelmä (arrangement in a waveguide branch for channelling an electron flow and corresponding method). Patent No. 122219, Finland, October 2011.

4. L. M. Baskin, P. Neittaanmäki, and B. A. Plamenevsky. Semiconductor device and method to control the state of a semiconductor device and to manufacture the same. United States, 20090250687, 2009. <http://www.freepatentsonline.com/y2009/0250687.html>.
5. L. M. Baskin, M. Kabardov, P. Neittaanmäki, B. A. Plamenevsky, and O. Sarafanov. Device for detecting magnetic field/laitte magneettikentän havaitsemiseksi. Patent No. 124670, Finland, November 2014.