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EDUCATION

- *2013* Habilitation, Institute of Mathematics of the Romanian Academy
- *1992* Ph.D., Pierre et Marie Curie University, Paris 6, France
- *1971* M.S., University of Bucharest, Faculty of Mathematics and Mechanics
- *1966* High school graduation, High School no. 2 in Barlad, Romania

EMPLOYMENT

- *1996-present* Senior Researcher, Institute of Mathematics of the Romanian Academy, Bucharest
- *1990-1996* Researcher, Institute of Mathematics of the Romanian Academy, Bucharest
- *1975-1990* Researcher, Institute of Power Studies and Designs, Bucharest
- *1975-1975* Researcher, Institute of Mathematics, Bucharest
- *1971-1974* System Analyst, Central Institute of Informatics, Bucharest

AWARDS AND HONOURS

- "Spiru Haret" prize of the Romanian Academy (for the year 1999), Section of Mathematics, 2001.

RESEARCH INTERESTS

- Domain decomposition methods for PDEs
- Embedding domain methods and optimal control problems
- Numerical methods for financial derivatives
- Numerical methods for nonlinear problems
- Parallel computation

RESEARCH IMPACT

- My papers have been cited in more than 400 papers.

- I have presented my research results in more than 60 symposiums and conferences. Plenary lectures presented as an invited speaker:
 - Global convergence rates of some multilevel methods for variational and quasi-variational inequalities, 23th International Conference on Domain Decomposition Methods, ICC Jeju island, Korea, July 6-10, 2015 (<http://dd23.kaist.ac.kr>).
 - Méthodes multi-niveau et multigrille pour quelques problèmes non linéaires, 12e Colloque Franco-Roumain en Mathématiques Appliquées, l'Université de Lyon, France, 25-30 août 2014.

RESEARCH AND TEACHING ABROAD

(visiting professor or researcher - positions between 1 week and 8 months)

- Laboratoire de Mathématiques et Physique, Université de Perpignan, France (2011 - 1 week)
- Laboratoire de Mécanique et d'Acoustique CNRS et Université d'Aix-Marseille, France (2015 - 1 week, 2014 - 1 week, 2013 - 1 week, 2012 - 1 week, 2010 - 1 week, 2009 - 2 weeks, 2008 - 2 weeks)
- Free University of Berlin, Germany (2009 - 1 week)
- Institut de Mathématiques, Ecole Polytechnique Fédérale de Lausanne, Switzerland (2009 - 1 month, 2007 - 1 week, 2004 - 1 month, 2002 - 1 month)
- Institute of Applied Mathematics, University of Bonn, Germany (2007 - 2 weeks)
- Laboratoire de Mathématiques, Université de Savoie, France (2007 - 2 weeks, 2006 - 2 weeks, 2005 - 3 months, 2003 - 3 months, 1997 - 1 month)
- Laboratoire Jacques-Louis Lions, Pierre et Marie Curie (Paris 6) University, France (2004 - 2 weeks)
- Department of Mathematics, University of Bergen, Norway (2003 - 2 weeks, 2001 - 2 weeks)
- Laboratoire des Propriétés Mécaniques et Thermodynamiques des Matériaux, Paris 13 University, France (2001 - 1 month + 5 months (associated researcher at CNRS), 1999 - 1 month, 1998 - 2 months, 1997 - 1 month)
- Texas A&M University, Department of Mathematics, College Station, USA (2000 - 4.5 months, 1998 - 4.5 months)
- Ecole Nationale Supérieure d'Informatique et de Mathématiques Appliquées de Grenoble, National Polytechnic Institute of Grenoble, France (1999 - 1 month, 1997 - 1 month, 1995 - 6 months)
- Laboratoire de Mécanique et Technologie, ENS Cachan, Paris 6 University, France (1996 - 6 months)

- Centre de Mise en Forme des Matériaux, Ecole Normale Supérieure des Mines de Paris in Sophia Antipolis, France (1993 - 8 months)

GRANTS AND OTHER ACTIVITIES

- 1.1 Director of the IMAR subcontract in the research contract CEEEX06-11-12/2006, budget 510091 RON.
- 1.2 Participant in research contracts: PCCE ID 100/2010, ID-PCE nr. 566/2009, PN-II-ID-PCCE-2008-1, CEEEX05-D11-23/2005, CNCSIS nr. 33079/2004, CERES 4-187/2004 and CNCSIS 844/2004.
- 2.1 Head of the Research Group of Continuum Mechanics in the Institute of Mathematics of the Romanian Academy (2012-present).
- 2.2 Member of the Scientific Council of the Institute of Mathematics of the Romanian Academy (2012-present).
- 3.1 Cooperation in the Joint Research Group on Domain Decomposition Methods for Nonlinear Problems. Applications in Applied Sciences and Engineering with Department of Mathematics, University of Bergen, Norway, under the contract nr. ICA1-CT-2000-70022 with the European Commission (2001-2004).
- 3.2 Responsible for the research sub-theme Domain Decomposition Methods for Nonlinear Problems in Program SCOPES 2005 - contract between Institute of Mathematics of the Romanian Academy and Ecole Polytechnique Fédérale de Lausanne, Switzerland.
- 3.3 Co-responsible of the projects "Méthodes de Décomposition de Domaine pour les Problèmes de Contact avec Frottement" (2008-2009, 2012-2013 and 2014-2015) in the Laboratoire Européen Associé CNRS Franco-Roumain (LEA Math-Mode). Cooperation with Laboratoire de Mécanique et d'Acoustique CNRS et Université de Provence (Aix-Marseille 1).
- 4.1 Member of the International Program Committee of the Third IMACS International Symposium on Iterative Methods in Scientific Computation, Jackson, Wyoming, USA, July 9-12, 1997.
- 4.2 Member of the International Program Committee of the First International Conference on Parallel, Distributed and Grid Computing for Engineering, Pecs, Hungary, 6-8 April 2009.
- 4.3 Member of the International Program Committee of The Second International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering, Ajaccio, Corsica, France, 12-15 April 2011.
- 4.4 Member in the Scientific Committee of the "XI-ème Colloque Franco-Roumain de Mathématiques Appliquées", 24-30 August, 2012, Bucharest, Romania

- 4.5 Member of the International Program Committee of The Third International Conference on Parallel, Distributed and Grid Computing for Engineering, Pécs, Hungary, 25-27 March 2013.
- 4.6 Member of the International Program Committee of The Fourth International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering, Dubrovnik, Croatia, 24-27 March 2015
(<http://www.civil-comp.com/conf/peng2015/peng2015.htm>).
- 5.1 Member in the Editorial Board of Mathematics and its Applications.
- 5.2 Member of the AMS.
- 6.1 Organizer (with Mickael Barboteu, University of Perpignan, France, and Andrei Constantinescu, Ecole Polytechnique, Palaiseau, France) of the special session "Analyse, contrôle et approche numérique en mécanique des solides" at the "10ème Colloque Franco-Roumain de Mathématiques Appliquées", 26-31 August 2010, Poitiers, France.
- 6.2 Organizer (with Marcus Sarkis, Worcester Polytechnic Institute, USA) of the special session "Domain Decomposition Methods and their Applications in Mechanics and Engineering" at the Joint International Meeting of the AMS and the Romanian Mathematical Society, Alba Iulia, Romania, June 27-30, 2013.
- 7 Referee at: IMA Journal of Numerical Analysis, Journal of Computational and Applied Mathematics, ZAMP, SIAM Journal on Numerical Analysis, Mathematical Finance, Applied Numerical Mathematics, Numerical Methods for Partial Derivative Equations, Journal of Computational Mathematics, Numerische Mathematik, Proceedings of the Romanian Academy, etc.
- 8 Referee at the funding proposals of the: NSF, Romanian Academy.
- 9 Member in the PhD Board of examiners at: Ecole Normale Supérieure de Cachan (France), University of Constanta, University of Bucharest, Polytechnic University of Bucharest.

PH.D. THESIS

Title: On the parallel computing in elasto-plasticity by the Schwarz domain decomposition method

Advisor: Professor M. Predeleanu

Board of examiners: G. Duvaut (Chairman), P. Le Tallec (Referee), Q. S. Nguyen (Referee), P. Ladevèze (Examiner), P. L. Lions (Examiner), J. F. Maître (Examiner), M. Predeleanu (Examiner)

TEACHING EXPERIENCE

- Graduate courses of numerical analysis at Faculty of Mathematics and Informatics, University of Bucharest, 2012-2013.
- Graduate courses in mathematics at University of Chambéry in 2003, France.
- Undergraduate courses in mathematics at Texas A&M University, College Station in 1998, USA.
- Graduate courses in applied mathematics at University of Chambéry in 1996, France.
- Graduate and undergraduate courses in applied mathematics at ENSIMAG, National Polytechnic Institute of Grenoble from 1995 to 1997, France.
- Graduate and undergraduate courses in applied mathematics at the Polytechnic University of Ploiesti from 1994 to 1995, Romania.
- Undergraduate courses in mathematics at the Polytechnic University of Bucharest from 1978 to 1980, Romania.

SYMPOSIUMS AND CONFERENCES

1. L. Badea, Additive and restricted additive Schwarz methods for quasilinear inequalities, The twenty-fourth international conference on domain decomposition methods, Spitsbergen, Svalbard, Norway, 6-10 February, 2017 (<http://www.ddm.org/dd24/home.html>).
2. Méthodes multigrille pour les inégalités contenant un terme non-différentiable, XIII-ème Colloque Franco-Roumain de Mathématiques Appliquées, Université "Alexandru Ioan Cuza" de Iași, 25-29 Août, 2016 (<http://www.math.uaic.ro/cfr2016/>).
3. Global convergence rates of some multilevel methods for variational and quasi-variational inequalities, 23th International Conference on Domain Decomposition Methods, ICC Jeju island, Korea, July 6-10, 2015 (<http://dd23.kaist.ac.kr>).
4. Multilevel methods for variational and quasi-variational inequalities and applications in mathematical finance, Angel Kanchev University of Ruse, Bulgaria, May 14, 2015.
5. Multilevel methods for variational and quasi-variational inequalities, the *22nd Conference of Industrial and Applied Mathematics - CAIM 2014* - "Vasile Alecsandri" University of Bacau, Romania, September 18-21, 2014.
6. Méthodes multi-niveau et multigrille pour quelques problèmes non linéaires, *12e Colloque Franco-Roumain en Mathématiques Appliquées*, l'Université de Lyon, France, 25-30 août 2014.

7. On the convergence rate of the multigrid methods for constrained minimization problems, *Conference dedicated to Professor Nicolae D. Cristescu on his 85th birthday*, University of Bucharest, June 20, 2014.
8. Two-level methods for variational and quasi-variational inequalities of the second kind, *Joint International Meeting of the AMS and the Romanian Mathematical Society*, Alba Iulia, Romania, June 27-30, 2013.
9. On the convergence of some hybrid multigrid methods for variational inequalities - *Anniversary Conference, Faculty of Sciences -150 years*, Bucharest, 29 august-1 september, 2013.
10. Multigrid Method with Constraint Level Decomposition for Variational Inequalities with Contraction Operators, *The Twenty First International Conference on Domain Decomposition Methods*, June 25-29, 2012, Rennes, France.
11. Sur la convergence d'une méthode multigrille pour quelques inégalités variationnelles nonlinéaires, *11-ème Colloque Franco-Roumain de Mathématiques Appliquées*, 24-30 August 2012, Bucharest, Romania.
12. Multigrid method with constraint level decomposition for some quasi-variational inequalities, *25-th IFIP TC7 Conference on System Modeling and Optimization*, 12–16 September, 2011, Berlin, Germany
13. Multigrid methods for constrained minimization problems, *The Seventh Congress of Romanian Mathematicians*, 27 June - 5 July, 2011, Brasov, Romania
14. Multigrid methods for nonlinear problems, *Exploratory Workshop: Current research topics in applied mathematics*, Institute of Mathematics of the Romanian Academy, Bucharest, 22–23 September 2010 (Conference - Diaspora in Higher Education and Scientific Research in Romania, Bucharest, 21–24 September 2010)
15. Méthodes multi-grille pour les problèmes de minimisation avec contraintes, *Seminar of "Laboratoire de Mécanique et d'Acoustique", CNRS de Marseille*, 3 September, 2010
16. Méthodes multi-grille pour les inégalités variationnelles, *10ème Colloque Franco-Roumain de Mathématiques Appliquées*, University of Poitiers, France, 26-31 August, 2010
17. (coauthor: M. Cocou) Analyse d'une classe d'inéquations dévolution implicites et applications à des problèmes quasi-statiques de contact, *10ème Colloque Franco-Roumain de Mathématiques Appliquées*, University of Poitiers, France, 26-31 August, 2010
18. (coauthor: M. Cocou) Approximation results for quasistatic contact problems, *ECCM 2010, IV European Conference on Computational Mechanics*, Paris, France, May 16-21, 2010

19. One- and Two-Level Domain Decomposition Methods for Nonlinear Problems, First International Conference on Parallel, Distributed and Grid Computing for Engineering, 6-8 April 2009, Pécs, Hungary
20. L. Badea, *Méthodes de décomposition du domaine pour de problèmes nonlinéaires*, 9-ème Colloque Franco-Roumain, 28 août-2 septembre 2008, Brasov, Roumanie
21. Additive and multiplicative Schwarz methods for inequalities with contraction operators, *6-th Congress of Romanian Mathematicians*, June 28 - July 4, 2007, Bucharest, Romania
22. One- and two-level Schwarz methods for inequalities with nonlinear operators, *SFB 611 Seminary*, Institute of Applied Mathematics, University of Bonn, April 26, 2007
23. Méthodes de décomposition des domaines de Schwarz pour les inéquations avec opérateurs de contraction, *8ème Colloque Franco-Roumain de Mathématiques Appliquées*, August 28 – Septembre 1, 2006, Chambéry, France
24. Additive Schwarz method for the constrained minimization of functionals in reflexive Banach spaces, *17th International Conference on Domain Decomposition Methods*, St. Wolfgang/Strobl, Austria, July 3–7, 2006
25. Domain decomposition method for fixed-point problems, "*Caius Iacob*" *National Conference of Fluid Mechanics and Tehnical Applications*, November 25-26, 2005, Bucharest, Romania
26. Multilevel Schwarz method for the minimization with constraints of non-quadratic functionals, Conference on *Applied Nonlinear Functional Analysis*, June 9-11, 2005, Constanta, Romania
27. Méthode Multiréseau pour la Minimisation avec Contraintes de Fonctionnelles Non-Quadratiques, *Seminar of the Laboratory of Applied Mathematics, University of Chambéry*, March 14, 2005, Chambéry, France
28. Sur l'Evaluation des Options Américaines, *7ème Colloque Franco-Roumain de Mathématiques Appliquées*, August 30 – September 3, 2004, Craiova, Romania
29. (coauthors: I. R. Ionescu and S. Wolf) Schwarz decomposition method in capturing dynamic friction instabilities, *ECCOMAS 2004 - European Congress on Computational Methods in Applied Sciences and Engineering*, 24-28 July 2004, Jyväskylä, Finland
30. Constrained minimization of non quadratic functionals by a multilevel Schwarz method, *IMAR Workshop*, June 22-27, 2004, Bucharest, Romania
31. Schwarz-Neumann method with more than two domains, *The Second European Finite Element Fair*, Berlin, June 4-5, 2004, Germany
32. On the Schwarz-Neumann method with an arbitrary number of domains, *Institut de Mathématiques, Ecole Polytechnique Fédérale de Lausanne*, March 24, 2004, Switzerland

33. Méthode de Schwarz multi-échelle pour la minimisation de fonctionnelles non quadratiques, *Laboratoire Jacques-Louis Lions, Pierre et Marie Curie (Paris 6) University*, January 19th, 2004, France
34. Multigrid methods for variational problems, *Joint seminar of IMAR and Faculty of Mathematics, University of Bucharest*, October 9th, 2003 (first part), October 23th, 2003 (second part), Romania
35. One and two-level multiplicative Schwarz methods for the constrained minimization of non-quadratic convex functionals, *Conference on New trends in continuum mechanics*, September 8-12, 2003, Constanta, Romania
36. On a multilevel Schwarz method for the constrained minimization of non-quadratic functionals, *The 15th International Conference on Domain Decomposition Methods*, July 21-25, 2003, Berlin, Germany
37. On a Schwarz multigrid method for the constraint minimization of non-quadratic functionals, *The 5th Congres of Romanian Mathematicians*, June 22-28, 2003, Pitesti, Romania
38. Taux de convergence d'une méthode de Schwarz multiéchelle pour la minimisation de fonctionnelles non quadratique, November 13, 2003, *Institut de Mathématiques, Ecole Polytechnique Fédérale de Lausanne*, Switzerland
39. (coauthor P. Daripa) A Domain Embedding/Boundary Control Method to Solve Elliptic Problems in Arbitrary Domains, *The 41st IEEE Conference on Decision and Control*, December 10-13, 2002, Las Vegas, Nevada
40. Convergence rate of a multiplicative Schwarz method for strongly nonlinear variational inequalities, *Conference on Analysis and Optimization of Differential Systems*, September 10-14, 2002, "Ovidius" University, Constanta, Romania
41. Taux de convergence d'une méthode de Schwarz multi-niveaux pour des inéquations variationnelles fortement nonlinéaires, *6ème Colloque Franco-Roumain de Mathématiques Appliquées*, September 2-6, 2002, Perpignan, France
42. Convergence rate of a one and two level Schwarz method for strongly nonlinear variational inequalities, *Seminar of Applied Mathematics*, April 15, 2002, University of Bucharest, Faculty of Mathematics, Romania
43. Taux de convergence d'une méthode multiréseau pour des inéquations variationnelles fortement nonlinéaires, *Seminar of the Laboratory of Applied Mathematics, University of Chambéry*, January 29, 2002, Chambéry, France
44. On the Schwarz-Neumann method with an arbitrary number of domains, *Seminar of Institute of Mathematics, Bergen University*, May 9, 2001, Bergen, Norway
45. On an embedding domain method using a distributed optimal control, *Second International Conference on Applied Mathematics*, October 19-21, 2000, Baia Mare, Romania

46. Sur une méthode spectrale de domaines fictifs utilisant un contrôle optimal distribué, *5-ème Colloque Franco-Roumain de Mathématique Appliquées*, August 28- September 1st, 2000, Constanta, Romania
47. Adaptive mesh finite element method for the sedimentary basin problem, *Conference of Mechanics of Solids*, May 28-29, 1999, Ploiesti, Romania
48. On the Schwarz-Neumann method with an arbitrary number of domains, *Seminar of the Institute of Mathematics of the Romanian Academy*, February 11, 1999, Bucharest, Romania
49. (coauthors: A. Miroux, D. Arizmendi, B. Bacroix and J. L. Raphanel) Prediction of stored energy during rolling of bcc materials as a function of final orientation using various polycrystalline models and a FE code, *Annual GAMM Meeting 99*, April 12-16, 1999, Metz, France
50. (coauthors: A. Miroux, D. Arizmendi, B. Bacroix and J. L. Raphanel) The influence of grain orientation on the stored energy during cold rolling of steels - experimental evidence and finite element simulation, *Le 7^{ème} colloque franco-polonais "Heterogeneities of deformation"*, October 22-24, 1998, Cracovia, Poland
51. (coauthor: J, Wang) The Schwarz method for variational inequalities with applications, *Third IMACS International Symposium on Iterative Methods in Scientific Computation*, July 9-12, 1997, Jackson Hole, Wyoming, USA
52. Quelques conclusions sur une tentative de parallélisation, *Seminar of the Laboratory of Mechanical and Thermodynamic Properties of the Materials, Paris 13 University*, October 22, 1997, Paris, France
53. Solution faible et approche éléments finis du problème des Options américaines, *Seminar of the Laboratory of Applied Mathematics, University of Chambéry*, September 26, 1997, Chambéry, France
54. Sur le phénomène de cavitation dans les solides, *Seminar of the Laboratory of Applied Mathematics, University of Chambéry*, September 23, 1997, Chambéry, France
55. On the dynamic cavitation in solids, *Third International Conference on Material Processing Defects*, July 1-3, 1997, Cachan, France
56. La cavitation en plasticité, *Seminar of the Laboratory of Modelling and Computing, Joseph Fourier University, National Polytechnic Institute of Grenoble*, March 20, 1996, Grenoble, France
57. Décomposition de domaines. Application à la mécanique des solides, *Seminar of the Laboratory of Modelling and Computing, Joseph Fourier University, National Polytechnic Institute of Grenoble*, April 4, 1996, Grenoble, France
58. Cavitation et endommagement dans les solides, *Seminar of the Laboratory of Mechanics and Technology, Paris 6 University*, February 20, 1996, Cachan, France

59. Quelques méthodes pour le calcul parallèle, *Seminar of the Laboratory of Mechanics and Technology, Paris 6 University*, February 6, 1996, Cachan, France
60. Calcul parallèle en élasto-plasticité en utilisant la méthode de Schwarz, *Seminar of the Laboratory of Applied Mathematics, University of Savoie*, January 24, 1996, Chambéry, France
61. Finite element solution for a seepage flow problem through a non-homogeneous multiply-connected dam, *The 5th International Conference on Boundary and Finite Element*, 27-29 April, 1995, Constanta, Romania
62. Damage and buckling in elasto-plastic bars, *Conference of Mechanics of Solids*, June 9-11, 1994, Constanta, Romania
63. Calcul parallèle dans des problèmes de mécanique des solides et de mécanique des fluides par décomposition de domaines, *Seminar of Numerical Analysis Lyon - Saint-Etienne Universities*, May 18, 1993, Saint-Etienne, France
64. Sur une méthode de décomposition des domaines en élasto - plasticité, *Seminar of the Laboratory of Mechanics and Technology, Paris 6 University*, November 11, 1992, Paris, France
65. On a domain decomposition method for parallel computing in elasto - plasticity, *The First European Conference on Numerical Methods in Engineering*, September 7-11, 1992, Brussels, Belgium

LIST OF PUBLICATIONS

Lori Badea

Journal and Proceedings Articles

1. L. Badea, Remarks concerning the convergence of the Jacobi and Gauss-Seidel iterative processes, *Rev. Roum. Math. Pures Appl.*, no. 8, 1980, pp. 1153-1165.
2. L. Badea, On the convergence of the Gauss-Seidel iteration for systems of linear algebraic equations with partitioned matrices, *Rev. Roum. Sci. Techn.*, series of Mech. Appl., no. 4, 1986, pp. 453-465.
3. L. Badea, A generalization of the Schwarz alternating method to an arbitrary number of subdomains, *Numer. Math.*, 55, 1989, pp. 61-81.
4. L. Badea, On the Schwarz alternating method with more than two subdomains for nonlinear monotone problems, *SIAM J. Numer. Anal.*, vol. 28, no. 1, February 1991, pp. 179-204.
5. L. Badea, On a domain decomposition method for parallel computing in elasto-plasticity, in *Numerical Methods in Engineering*, Ch. Hirsh, O. C. Zienkiewicz, E. Onate (Editors), Elsevier, Sci. Publ., 1992, pp. 321-328.
6. L. Badea and P. Gilormini, Application of a Domain Decomposition Method to Elasto-plastic Problems, *Int. J. Solids Structures*, vol. 31, no. 5, 1994, pp. 643-656.
7. L. Badea and E. Soós, Damage and buckling in elasto-plastic bars, *Proceedings of The XVIIth Conference in Mechanics of Solids*, vol. 1, 9-11 June 1994, Constanta, Romania, pp. 131-138.
8. L. Badea, Finite element solution for a seepage flow problem through a non-homogeneous multiply-connected dam, *Proceedings of The 5th International Conference on Finite Elements and thier Applications*, 27-29 April 1995, Constanta, Romania, pp. 41-50.
9. L. Badea and M. Predeleanu, On the dynamical cavitation problem in viscoplastic solids, *Mechanics Research Communications*, vol. 23, no. 5, 1996, pp. 461-474.
10. L. Badea, On a plasticity problem with damage, *Rev. Roum. Math Pures et Appl.*, 42, 7-8, 1997, pp. 495-511.
11. L. Badea and E. Soós, A new theory of the stored energy in the elasto-plasticity and the torsion test, *Eur. J. Mech., A/Solids*, **16**, 3, 1997, pp. 467-500.
12. L. Badea and M. Predeleanu, On the dynamic cavitation in solids, in *Advanced Methods in Materials Processing Defects*, M. Predeleanu and P. Gilormini (Editors), Elsevier, 1997, pp. 3-13.

13. L. Badea and J. Wang, The Schwarz method for variational inequalities with applications, in *Iterative Methods in Scientific Computation*, vol. 4 of Series in Computational and Applied Mathematics, J. Wang, M. Allen, B. Chen and T. Mathew (Editors), 1998, pp. 199-204.
14. L. Badea, R. E. Ewing and J. Wang, A study of free boundary problems of fluid flow in porous media by mixed methods, in *Free boundary problems: theory and applications*, I. Athanasopoulos, et al., eds, CRC Research Notes in Mathematics, 409, Chapman & Hall, New York, 1999, pp. 3-13.
15. A. Miroux, L. Badea, D. Arizmendi, B. Bacroix and J. L. Raphanel, The influence of grain orientation on the stored energy during cold rolling of steels - Experimental evidence and finite element simulation, *Archives of Metallurgy*, vol. 44, 1999, pp. 241-252.
16. L. Badea and J. Wang, A new formulation for the valuation of American options, I: Solution uniqueness, in *Analysis and Scientific Computing*, Eun-Jae Park and Jongwoo Lee (Eds.), Proceedings of the 19th Daewoo Workshop in Pure Mathematics, Volume 19, Part II, 1999, pp. 3-16.
17. L. Badea and J. Wang, A new formulation for the valuation of American options, II: Solution existence, in *Analysis and Scientific Computing*, Eun-Jae Park and Jongwoo Lee (Eds.), Proceedings of the 19th Daewoo Workshop in Pure Mathematics, Volume 19, Part II, 1999, pp. 17-33.
18. L. Badea and J. Wang, An Additive Schwarz method for variational inequalities, *Math. of Comp.*, **69**, 232, 2000, pp. 1341-1354.
19. L. Badea, Adaptive mesh finite element method for the sedimentary basin problem, *Rev. Roum. Math. Pures Appl.*, tome 45, no. 2, 2000, pp. 171-181.
20. L. Badea and P. Daripa, On a boundary control approach to embedding domain method, *SIAM J. on Control and Optimization*, Vol. 40, No. 2, 2001, pp. 421-449.
21. L. Badea and P. Daripa, A fast algorithm for two-dimensional elliptic problems, *Numerical Algorithms*, **30**, 2002, pp. 199-239.
22. L. Badea and P. Daripa, On a Fourier method of embedding domains using an optimal distributed control, *Numerical Algorithms*, **32**, 2003, pp. 261-273.
23. L. Badea and P. Daripa, A Domain Embedding/Boundary Control Method to Solve Elliptic Problems in Arbitrary Domains, in *Proceedings of the 41st IEEE Conference on Decision and Control*, December 2002, pp. 3004-3009.
24. L. Badea, X.-C. Tai and J. Wang, Convergence rate analysis of a multiplicative Schwarz method for variational inequalities, *SIAM J. Numer. Anal.*, vol. 41, nr. 3, 2003, pp. 1052-1073.
25. L. Badea, Convergence rate of a multiplicative Schwarz method for strongly nonlinear variational inequalities, in *Analysis and Optimization of Differential*

- Systems*, V.Barbu, I. Lasiecka, D. Tiba and C. Varsan, Eds, Kluwer Academic Publishers, 2003, pp. 31-42.
26. L. Badea, On a multiplicative Schwarz domain decomposition method for variational inequalities, in L. Badea, C. Faciu, L. Gratie, M. Mihailescu-Suliciu, D. Polisevski and N. Simion, *Current Topics in Continuum Mechanics*, vol. II, Lazar Dragos, Ed., Editura Academiei, Bucharest, 2003, pp. 11-40.
 27. L. Badea, On the Schwarz-Neumann method with an arbitrary number of domains, *IMA J. Num. Anal.*, **24**, 2004, pp. 215-238.
 28. L. Badea and P. Daripa, A domain embedding method using the optimal distributed control and a fast algorithm, *Numerical Algorithms*, **36**, 2004, pp. 95-112.
 29. R. Brenner, O. Castelnau and L. Badea, Mechanical field fluctuations in polycrystals estimated by homogenization techniques, *Proc. R. Soc. Lond. A*, **460**, 2004, pp. 3589-3612.
 30. L. Badea, I. Ionescu and S. Wolf, Domain decomposition method for dynamic faulting under slip-dependent friction, *J. of Computational Physics*, 201, 2004, pp. 487-510.
 31. L. Badea, I. R. Ionescu and S. Wolf, Schwarz decomposition method in capturing dynamic friction instabilities, in P. Neittaanmäki, T. Rossi, S. Korotov, E. Oñate, J. Périaux and D. Knörzer (eds.), *Proceedings of the 4th European Congress on Computational Methods in Applied Sciences and Engineering*, EC-COMAS, 2004.
 32. L. Badea, On the valuation of American options, *Annals of University of Craiova, Mathematics and Computer Science series*, vol. 31(2), 2004, pp. 91-97.
 33. L. Badea, Multilevel Schwarz method for the minimization with constraints of non-quadratic functionals, *An. St. Univ. Ovidius Constanta*, vol. 12(2), 2004, pp. 51-64.
 34. L. Badea, One and two-level multiplicative Schwarz methods for the constrained minimization of non-quadratic convex functionals, in M. Mihailescu-Suliciu (ed.), *New trends in continuum mechanics*, Conference Proceedings, September 8-12, 2003, Constanta, Romania, Theta Publisher, Bucharest, 2005, pp. 1-12.
 35. L. Badea, Domain decomposition method for fixed-point problems, *Analele Universitatii Bucuresti, Seria Matematica*, vol. 1, 2006, pp. 5-16.
 36. L. Badea, Convergence rate of a Schwarz multilevel method for the constrained minimization of non-quadratic functionals, *SIAM J. Numer. Anal.*, vol. 44, no. 2, 2006, pp. 449-477.
 37. L. Badea, Additive Schwarz method for the constrained minimization of functionals in reflexive Banach spaces, in U. Langer et al. (eds.), *Domain decomposition methods in science and engineering XVII*, LNCSE 60, Springer, 2008, pp. 427-434.

38. L. Badea, Schwarz methods for inequalities with contraction operators, *Journal of Computational and Applied Mathematics*, 215, 1, 2008, pp. 196-219. (doi:10.1016/j.cam.2007.04.004)
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