KOHR Mirela / PhD since 1996 / **Professor** since 2006

LIST OF PUBLICATIONS

Books in international publishers

1. **M. Kohr**, I. Pop, *Viscous Incompressible Flow for Low Reynolds Numbers*, WIT Press: Computational Mechanics Publications, Southampton (UK), Boston, 2004, 448 pp. ISBN: 1-85312-991-7.

Books in Romanian publishers

1. **M. Kohr**, *Modern Problems in Viscous Fluid Mechanics* (2 vols), Cluj University Press, 2000 (in Romanian):
vol.1, 255 pp. ISBN 973-595-077-4
vol.2, 452 pp. ISBN 973-595-078-2.

2. **M. Kohr**, *The Study of Some Viscous Fluid Flows by Boundary Integral Methods*, Cluj University Press, Cluj-Napoca, 1997, 346 pp. ISBN 973-9261-38-8 (in Romanian).

Textbooks

1. **M. Kohr**, *Special Chapters of Mechanics*, Cluj University Press, 2005, 479 pp. ISBN: 973-610-386-2 (in Romanian).

2. A. Turcu, **M. Kohr-Ile**, *Problems in Theoretical Mechanics*, Lito. Univ. Babeş-Bolyai, Cluj-Napoca, 1993, 342 pp. (in Romanian).

Relevant scientific papers (selective list)

Preprints

1. **M. Kohr**, M. Lanza de Cristoforis, W.L. Wendland, *On the Robin-transmission boundary value problems for the nonlinear Darcy-Forchheimer-Brinkman and Navier-Stokes systems*, preprint (2014).

ISI publications

1. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Support points and extreme points for mappings with A-parametric representation in* $\mathbb{C}^n$, Journal of Geometric Analysis, DOI 10.1007/s12220-015-9600-z, to appear.

2. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Extremal properties associated with univalent subordination chains in* $\mathbb{C}^n$, Mathematische Annalen, **359** (2014), 61-99.

3. **M. Kohr**, M. Lanza de Cristoforis, W.L. Wendland, *Boundary value problems of Robin type for the Brinkman and Darcy-Forchheimer-Brinkman systems in Lipschitz domains*, Journal of Mathematical Fluid Mechanics, **16** (2014), 595-630.

4. **M. Kohr**, M. Lanza de Cristoforis, W.L. Wendland, *Poisson problems for semilinear Brinkman systems on Lipschitz domains in* $\mathbb{R}^n$, Zeitschrift für Angewandte Mathematik und Physik, to appear, DOI: 10.1007/s00033-014-0439-0.

5. **M. Kohr**, M. Lanza de Cristoforis, W.L. Wendland, *Nonlinear Neumann-transmission problems for Stokes and Brinkman equations on Euclidean Lipschitz domains*, Potential Analysis, **38** (2013), 1123-1171.

6. **M. Kohr**, C. Pintea, W.L. Wendland, *Layer potential analysis for pseudodifferential matrix operators in Lipschitz domains on compact Riemannian manifolds: Applications to pseudodifferential Brinkman operators*, International Mathematics Research Notices, **2013**, No. 19, 4499-4588.

7. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Univalent Subordination Chains in Reflexive Complex Banach Spaces*, Contemporary Mathematics (AMS), **591** (2013), 83-111.

8. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Asymptotically spirallike mappings in reflexive complex Banach spaces*, Complex Analysis and Operator Theory, **7** (2013), 1909-1927.

9. **M. Kohr**, C. Pintea, W.L. Wendland, *Poisson-transmission problems for L^∞ perturbations of the Stokes system on Lipschitz domains in compact Riemannian manifolds*, J. Dyn. Diff. Equat., to appear, DOI: 10.1007/s10884-014-9359-0.

10. T. Groşan, **M. Kohr**, W.L. Wendland, *Dirichlet problem for a nonlinear generalized Darcy-Forchheimer-Brinkman system in Lipschitz domains*, Mathematical Methods in the Applied Sciences, to appear, DOI: 10.1002/mma.3302.

11. **M. Kohr**, C. Pintea, W.L. Wendland, *Dirichlet-transmission problems for pseudodifferential Brinkman operators on Sobolev and Besov spaces associated to Lipschitz domains in Riemannian manifolds*, Zeitschrift für Angewandte Mathematik und Mechanik, **93** (2013), No. 6-7, 446-458. DOI 10.1002/zamm.201100194.

12. **M. Kohr**, C. Pintea, W.L. Wendland, *Neumann-transmission problems for pseudodifferential Brinkman operators on Lipschitz domains in compact Riemannian manifolds*, Communications on Pure and Applied Analysis, **13** (2014), 175-202.

13. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Extreme points, support points and the Loewner variation in several complex variables*, Sci. China Math., **55** (2012), no.7, 1353-1366.

14. **M. Kohr**, C. Pintea, W.L. Wendland, *Dirichlet - transmission problems for general Brinkman operators on Lipschitz and C^1 domains in Riemannian manifolds*, Discrete and Continuous Dynamical Systems B, **15** (2011), no.4, 999-1018.

15. **M. Kohr**, C. Pintea, W.L. Wendland, *Stokes-Brinkman transmission problems on Lipschitz and C^1 domains in Riemannian manifolds*, Communications on Pure and Applied Analysis, **9** (2010), No. 2, 493-537.

16. **M. Kohr**, C. Pintea, W.L. Wendland, *Brinkman-type operators on Riemannian manifolds: Transmission Problems in Lipschitz and C^1 domains*, Potential Analysis, **32** (2010), 229-273.

17. P. Curt, G. Kohr, **M. Kohr**, *Homeomorphic extension of strongly spirallike mappings in $\mathbb{C}^n$*, Science China Mathematics, **53** (2010), No.1, 87-100.

18. **M. Kohr**, G.P. Raja Sekhar, W.L. Wendland, *Rigorous estimates for the 2D Oseen-Brinkman transmission problem in terms of the Stokes-Brinkman expansion*, Mathematical Methods in the Applied Sciences, **33** (2010), No. 18, 2225-2239.

19. **M. Kohr**, G.P. Raja Sekhar, M.E. Ului, W.L. Wendland, *Two-dimensional Stokes-Brinkman cell model - A boundary integral formulation*, Appl. Anal., **91** (2012), 251-275.

20. J. Prakash, G.P. Raja Sekhar, **M. Kohr**, *Stokes flow of an assemblage of porous particles-stress jump condition*, Z. Angew. Math. Phys., **62** (2011), 1027-1046.

21. **M. Kohr**, W.L. Wendland, *Boundary integral equations for a three-dimensional Brinkman flow problem*, Math. Nachr., **282** (2009), No. 9, 1305-1333.

22. **M. Kohr**, W.L. Wendland, G.P. Raja Sekhar, *Boundary integral equations for two-dimensional low Reynolds number flow past a porous body*, Mathematical Methods in the Applied Sciences, **32** (2009), No.8, 922-962.

23. **M. Kohr**, G.P. Raja Sekhar, W.L. Wendland, *Boundary integral equations for a three-dimensional Stokes-Brinkman cell model*, Mathematical Models and Methods in Applied Sciences, **18** (2008), No.12, 2055-2085.

24. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Spirallike mappings and univalent subordination chains in* $\mathbb{C}^n$, Annali della Scuola Normale Superiore di Pisa, Classe di Scienze, **7** (2008), No. 4, 717-740.

25. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Asymptotically spirallike mappings in several complex variables*, Journal d' Analyse Mathematique, **105** (2008), 267-302.

26. I. Graham, H. Hamada, G. Kohr, **M. Kohr**, *Parametric representation and asymptotic starlikeness in* $\mathbb{C}^n$, Proceedings of the American Mathematical Society, **136** (2008), 3963-3973.

27. **M. Kohr**, G.P. Raja Sekhar, W.L. Wendland, *Boundary integral method for Stokes flow past a porous body*, Mathematical Methods in the Applied Sciences, **31**(9) (2008), 1065-1097.

28. **M. Kohr**, G.P. Raja Sekhar, J.R. Blake, *Green's function of the Brinkman equation in a 2D anisotropic case*, IMA Journal of Applied Mathematics, **73**(2)(2008), 374-392.

29. **M. Kohr**, J. Prakash, G.P. Raja Sekhar, W.L. Wendland, *Expansions at small Reynolds numbers for the flow past a porous circular cylinder*, Applicable Analysis, **88** (2009), 1093-1114.

30. **M. Kohr**, G.P. Raja Sekhar, *Existence and uniqueness result for the problem of viscous flow in a granular material with a void*, Quarterly of Applied Mathematics, **65** (2007), 683-704.

31. **M. Kohr**, *The interior Neumann problem for the Stokes resolvent system in a bounded domain in* $\mathbb{R}^n$, Archives of Mechanics, 59(2007), No.3, 283-304.

32. **M. Kohr**, G.P. Raja Sekhar, *Existence and uniqueness result for two-dimensional porous media flows with porous inclusions based on Brinkman equation*, Engineering Analysis with Boundary Elements, **31** (2007), No.7, 604613.

33. **M. Kohr**, *Boundary value problems for a compressible Stokes system in bounded domains in* $\mathbb{R}^n$, Journal of Computational and Applied Mathematics, **201** (2007), No. 1, 128-145.

34. **M. Kohr**, *The Dirichlet problems for the Stokes resolvent equations in bounded and exterior domains in* $\mathbb{R}^n$, Mathematische Nachrichten, **280** (2007), No. 56, 534-559.

35. **M. Kohr**, *A mixed boundary value problem for the unsteady Stokes system in a bounded domain in* $\mathbb{R}^n$, Engineering Analysis with Boundary Elements, **29** (2005), No. 10, 936-943.

36. I. Graham, G. Kohr, **M. Kohr**, *Loewner chains and parametric representation in several complex variables*, Journal of Mathematical Analysis and Applications, **281** (2003), 425-438.

37. **M. Kohr**, *Boundary integral method for a Stokes flow past a solid sphere and a viscous drop*, Computer Methods in Applied Mechanics and Engineering, **190** (2001), No. 42, 5529-5542.

38. **M. Kohr**, *An indirect boundary integral method for a Stokes flow problem*, Computer Methods in Applied Mechanics and Engineering, **190** (2000), No.5-7, 487-497.

39. I. Graham, G. Kohr, **M. Kohr**, *Loewner chains and the Roper-Suffridge extension operator*, Journal of Mathematical Analysis and Applications, **247** (2000), 448-465.

40. I. Graham, G. Kohr, **M. Kohr**, *Basic properties of Loewner chains in several complex variables*, In: Geometric Function Theory in Several Complex Variables, 165-181, World Sci. Publishing, River Edge, NJ, 2004. ISBN 981-256-023-8

41. **M. Kohr**, *A boundary integral method for an oscillatory Stokes flow past two bodies*, Proceedings of the 3rd International ISAAC Congress, Berlin, 2001, World Sci. Publ., 2003, 1215-1222. ISBN 981-238-572-X

42. **M. Ile-Kohr**, I. Stan, Z. Kasa, *Numerical analysis for tension gradient flow on the liquid obstacles*, ZAMM, vol.75, 337-338, 1995. ISSN 0044-2267

Papers in journals which are presently included in Science Citation Index Expanded List

43. **M. Kohr**, W.L. Wendland, *Variational boundary integral equations for the Stokes system*, Applicable Analysis, 85(2006), no. 11, 1343 1372.

44. **M. Kohr**, *Existence and uniqueness result for Stokes flows in a half-plane*, Archives of Mechanics, **50**, No.4, 791-803, 1998.

45. **M. Kohr**, *A boundary integral equations method for asymmetric Stokes flow between two parallel planes*, Archives of Mechanics, **49**, No.6, 1167-1185, 1997.

46. **M. Kohr**, *Boundary element method to the study of a Stokes flow past an obstacle in a channel*, Archives of Mechanics, **49**, No.1, 129-142, 1997.

47. **M. Kohr**, *Some existence result for a Stokes flow between two arbitrarily closed curves*, Archives of Mechanics, **48**, No.6, 973-984, 1996.

48. **M. Kohr-Ile**, *On the existence of solutions for two dimensional Stokes flows past rigid obstacles*, Archives of Mechanics, **48**, No.2, 385-394, 1996.

Chapters/articles in books/proceedings

1. **M. Kohr**, M. Lanza de Cristoforis, W. L. Wendland, *Nonlinear Darcy-Forchheimer-Brinkman system with linear Robin boundary conditions in Lipschitz domains*, in Complex Analysis and Potential Theory (T. Aliev Azeroglu, A.Golberg, S.Rogosin eds.), 111–124, Cambridge Scientific Publishers, 2014. ISBN 978-1-908106-40-7

2. **M. Kohr**, C. Pintea, *On the invertibility of some elliptic operators on manifolds with boundary and cylindrical ends*, in: "Topics in Mathematical Analysis and Applications", Springer volume, **94** (2014), 483-500, Editors: Th. M. Rassias, L. Toth.

Other papers in international journals indexed in data bases (selective list)

1. **M. Kohr**, G. Kohr, W.L. Wendland, *Boundary integral equations for viscous incompressible flows in porous media or past porous bodies*, Proceedings in Applied Mathematics and Mechanics (PAMM), 8(2008), no.1, 10891-10892.

2. G.P. Raja Sekhar, J. Prakash, **M. Kohr**, *Steady and oscillatory analysis of porous catalysts in fluidized beds*, Proceedings in Applied Mathematics and Mechanics (PAMM), 8(2008), no.1, 10613-10614.

3. H. Hamada, G. Kohr, **M. Kohr**, *Parametric representation and extension operators for biholomorphic mappings on some Reinhardt domains*, Complex Variables Theory Appl., 50(2005), 507-519.

4. **M. Kohr**, *An application of the method of matched asymptotic expansions for low Reynolds number flow past a cylinder of arbitrary cross section*, Int. J. Math. Math. Sci., 47(2004), 2525-2535.

5. **M. Kohr**, *An indirect boundary integral method for an oscillatory Stokes flow problem*, Int. J. Math. Math. Sci., 47(2003), 2961-2976.

6. **M. Kohr**, I. Pop, *Boundary integral method for an oscillatory Stokes flow past a solid particle*, Int. J. Appl. Mech. Engrg., 8(2003), 603-620.

7. **M. Kohr**, *A second kind integral equation formulation for the interaction between a solid particle and a compound drop at low Reynolds number*, Applied Mechanics and Engineering, vol.5, nr.3, 557-577, 2000. Zbl 0980.76015

8. **M. Kohr**, *A direct boundary integral method for a mobility problem*, Georgian Mathematical Journal (produced by Georgian Academy of Sciences and Heldermann Verlag), vol.7, nr.1, 73-84, 2000.

9. **M. Kohr**, *An indirect boundary integral equation method to Stokes flow past rigid obstacles in a tunnel*, Journal of Theoretical and Applied Fluid Mechanics, vol.2, no. 1-2, 51-66, 1999-2000.

10. S. Kanas, G. Kohr, **M. Kohr**, *Uniformly starlike and uniformly convex mappings in several complex variables*, Tr. Petrozavodsk. Gos. Univ. Ser. Mat., nr. 7(2000), 29-41.

11. **M. Kohr**, I. Lazăr, *Numerical analysis for the effect of surfactants on a circular liquid lens*, Applied Mechanics and Engineering, vol.4, nr.3, 589-608, 1999.

12. **M. Kohr**, *An direct boundary integral equations method to Stokes flow past rigid bodies in ground effect*, Applied Mechanics and Engineering, vol.3, nr.2, 217-232, 1998.

13. **M. Kohr**, *An integral method for two dimensional Stokes flows past rigid obstacles in the half-plane*, Applied Mechanics and Engineering, vol.3, nr.1, 5-24, 1998.

14. **M. Kohr**, *An integral method for the interaction between a solid particle and a viscous drop in the half-space*, Zeszyty Naukowe Politechniki Rzeszowskiej, Matematyka, 162(21), 87-102, 1997.

15. G. Kohr, **M. Kohr**, *Certain partial differential subordinations on some Reinhardt domains in* $\mathbb{C}^n$, Annales Polonici Mathematici, vol.65, nr.2, 179-191, 1997.

16. **M. Kohr**, *An existence result for oscillatory Stokes flows*, Libertas Mathematica, vol.16, 113-122, 1996.

17. G. Kohr, **M. Kohr-Ile**, *Subordination theory for holomorphic mappings of several complex variables*, Banach Center Publications, vol.37, 129-134, 1996. ISSN: 0137-6934.

18. **M. Kohr-Ile**, *Some existence results for Stokes and Oseen flows past rigid obstacles*, Libertas Mathematica, vol.15, 143-157, 1995.

19. G. Kohr, **M. Kohr-Ile**, *Some sufficient criteria of univalency in* $\mathbb{C}^n$, Zeszyty Naukowe Politechniki Rzeszowskiej, Matematyka, 139(18), 65-70, 1995.

Papers in journals of Romanian Academy indexed in data bases (selective list)

1. **M. Kohr**, C. Pintea, W.L. Wendland, *On mapping properties of layer potential operators for Brinkman equations on Lipschitz domains in Riemannian manifolds*, Mathematica (Cluj), 52(75), no. 1 (2010), 31-45.

2. **M. Kohr**, *A second-kind integral equation method for Stokes flow past smooth obstacles in a channel*, Mathematica (Cluj), 47(70), no. 2 (2005), 165-178.

3. **M. Kohr**, *The study of a Stokes flow by the boundary integral equation method*, Mathematica (Cluj), 45(68), 29-41, 2003.

4. **M. Kohr**, *A boundary integral equation method for an oscillatory flow problem*, Mathematica (Cluj), 44(67), 153-167, 2002.

5. **M. Kohr**, *Boundary integral equation method for a Stokes flow problem*, Studii şi Cercetări Matematice (Mathematical Reports), vol.3(53), 2001, 29-32.

6. **M. Kohr**, *A direct boundary integral formulation for a Stokes flow problem*, Rev. Roum. Math. Pures Appl., vol.45, nr.6, 2000, 959-974.

7. H. Hamada, G. Kohr, **M. Kohr**, *First order partial differential subordinations on bounded balanced pseudoconvex domains in* $\mathbb{C}^n$, Mathematica (Cluj), vol.41(64), nr.2, 1999, 161-175.

8. H. Hamada, G. Kohr, **M. Kohr**, *Strongly starlike mappings of order alpha on balanced pseudoconvex domains*, Rev. Roum. Math. Pures Appl., vol.44, 1999, 583-594.

9. **M. Kohr**, *A theoretical analysis for the interaction of two obstacles with cylindrical interfaces in a Stokes flow (I)*, Mathematica (Cluj), vol.40(63), nr.2, 173-187, 1998.

10. **M. Kohr**, *A possible integral equations method for the motion of a liquid cell in a channel*, Mathematica (Cluj), vol.40(63), nr.1, 111-122, 1998.

11. **M. Kohr-Ile**, G. Kohr, *Some suffcient conditions of uniform starlikeness, convexity and alpha convexity for functions in the class* C^1, Studii şi Cercetări Matematice (Mathematical Reports), vol.49, 77-84, 1997.

12. **M. Kohr-Ile**, M. Lupu, *The Valcovici-Birkhoff's model for the axisymmetric compressible and ideal flow*, Mathematica (Cluj), vol.38(61), nr.1-2, 75-88, 1996.

13. G. Kohr, **M. Kohr-Ile**, *On some sufficient conditions of starlikeness of order alpha in* $\mathbb{C}^n$, Studii şi Cercetări Matematice (Mathematical Reports), vol.48, nr.5-6, 357-363, 1996.

14. **M. Kohr-Ile**, G. Kohr, *Some sufficient conditions of univalency for complex functions in the class* C^1, Mathematica (Cluj), vol.37(60), nr.1-2, 123-129, 1995.

15. **M. Kohr-Ile**, C.I. Gheorghiu, *An integral formulation for some flows with free boundary*, Mathematica (Cluj), vol.36(59), nr.1, 43-54, 1994.

16. T. Petrila, **M. Kohr**, *Some boundary element techniques for Stokes flows (part I)*, Rev. Anal. Numer. Theor. Approx., vol.21, nr.2, 167-182, 1992.

Papers published in other journals
(selective list)

1. **M. Kohr**, G.P. Raja Sekhar, W.L. Wendland, *Rigorous estimates for the 2D Oseen-Brinkman transmission problem in terms of the Stokes-Brinkman expansion*, Berichte aus dem Institut für Angewandte Analysis und Numerische Simulation, Universität Stuttgart, Germany, Preprint 2009/010, 20 pp.

2. **M. Kohr**, W.L. Wendland, *Boundary integral equations for a three-dimensional Brinkman flow problem*, Berichte aus dem Institut für Angewandte Analysis und Numerische Simulation, Preprint 2007/007, Universität Stuttgart, Germany, 38 pp., ISSN 1611-4176.

3. **M. Kohr**, W.L. Wendland, *The application of a fast multipole Galerkin boundary element method for the Stokes system*, Bericht 2006/03 SFB404, Universität Stuttgart, Germany, 34 pp.