

## List of Publications

### Books :

1. **Farina, Angiolo, Mikelić, Andro, Rosso, Fabio (Eds.)**, Non-Newtonian Fluid Mechanics and Complex Flows, Levico Terme, Italy 2016, Authors: Farina, A., Mikelić, A., Saccomandi, G., Sequeira, A., Toro, E., Lecture Notes in Mathematics, C.I.M.E. Foundation Subseries, Vol. 2212, Springer International Publishing 2018.
2. **A. Farina, A. Klar, R.M.M. Mattheij, A. Mikelić, N. Siedow, A., Fasano (Eds.)**, Mathematical Models in the Manufacturing of Glass, *C.I.M.E. Summer School, Montecatini Terme, Italy 2008, Series: Lecture Notes in Mathematics*, Vol. 2010, Subseries: C.I.M.E. Foundation Subseries, Springer Verlag, 2011.
3. **A. Mikelić, C. Schwab**, Reactive flow and transport through complex systems. Abstracts from the workshop held October 30–November 5, 2005. Organized by Cornelius J. van Duijn, Andro Mikelić and Christoph Schwab. Oberwolfach Rep. 2 (2005), no. 4, 2761–2832.
4. **N. Antonić , C.J. van Duijn, W. Jäger, A. Mikelić**, " *Multiscale Problems in Science and Technology .Challenges to Mathematical Analysis and Perspectives.*" , Proceedings of the *Conference on Multiscale Problems in Science and Technology*, Dubrovnik, Croatie, 3/9/2000 - 9/9/2000, Springer-Verlag, Heidelberg, 2002,
5. **M. Espedal, A. Fasano, A.Mikelić**, " *Filtration in Porous Media and Industrial Applications* " , Lectures given at the 4th session of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Cetraro, Italia, August 24-29, 1998, Lecture Notes in Mathematics Vol. 1734, Springer, 2000.
6. **G. Allaire, T. Arbogast, J.-L. Auriault, A. Bourgeat, H. Ene, K. Golden, U. Hornung, A. Mikelić, R.E. Showalter** ,Homogenization and Porous Media, *Interdisciplinary Applied Mathematics Series*, Vol. 6, Springer, New York, 1997.
7. **A. Bourgeat, C. Carasso, S. Luckhaus, A. Mikelić (Eds.)**, Mathematical Modelling of Flow through Porous Media, (Proceedings of the " Congrès international sur la modélisation mathématique des écoulements en milieu poreux ", Ecole Nationale Supérieure des Mines, Saint-Etienne, 22/05 – 26/05/1995.) , World Scientific, Singapore, 1995.

### Articles accepted for publication:

8. **C. J. van Duijn, A. Mikelić, M. F. Wheeler, Th. Wick**, Thermoporoelasticity via homogenization I. Modeling and formal two-scale expansions, accepted for publication in *Internat. J Engrg Sci.*, 2019, doi:10.1016/j.ijengsci.2019.02.005.

9. **A. Mikelić, M. F. Wheeler, T. Wick**, Phase-field through iterative splitting of hydraulic fractures in a poroelastic medium, accepted for publication in *GEM - Int J Geomath.*, (2019) 10: 2. doi: 10.1007/s13137-019-0113-y.

*Articles published in 2019:*

10. **C.J. van Duijn, A. Mikelić, T. Wick**, A monolithic phase-field model of a fluid-driven fracture in a nonlinear poroelastic medium, *Mathematics and Mechanics of Solids*, Vol. 24 (5) (2019), 1530–1555.

11. **A. Mikelić, J. Tambača**, Derivation of a poroelastic elliptic membrane shell model, *Appl. Anal.*, Vol. 98 (1–2) (2019), 136–161.

*Articles published in 2018:*

12. **S. Lee, A. Mikelić, M. F. Wheeler, T. Wick**, Phase-field modeling of two phase fluid filled fractures in a poroelastic medium, *SIAM Multiscale Model. Simul.*, Vol. 16 (2018), 1542–1580.

13. **A. Marciniak-Czochra, A. Mikelić, T. Stiehl**, Renormalization group second order approximation for singularly perturbed nonlinear ordinary differential equations, *Math. Methods Appl. Sci.*, Vol. 41 (2018), 5691–5710.

14. **Th. Carraro, E. Marušić - Paloka, A. Mikelić**, Effective pressure boundary condition for the filtration through porous medium via homogenization, *Nonlinear Anal. Real World Appl.*, Vol. 44 (2018), 149–172.

15. **A. Mikelić**, An introduction to the homogenization modeling of non-Newtonian and electrokinetic flows in porous media, chapter in "New trends in non-newtonian fluid mechanics and complex flow", Lecture Notes in Mathematics Vol. 2212, C.I.M.E. Series, Springer, 2018, corresponding to the CIME-CISM Course "New trends in non-newtonian fluid mechanics and complex flows", Levico Terme, Italie, 28/8- 2/9/2016, p. 171-227.

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16. **G. Allaire, O. Bernard, J.-F. Dufrêche, A. Mikelić**, Ion transport through deformable porous media: derivation of the macroscopic equations using upscaling, *Comp. Appl. Math.*, Vol. 36 (2017), 1431–1462.

17. **A. Marciniak-Czochra, A. Mikelić**, Shadow limit for parabolic-ODE systems through a cut-off argument, *Rad Hrvat. Akad. Znan. Umjet. Mat. Znan.*, Vol. 21 = 532 (2017), 99–116.

18. **G. Scovazzi, M. F. Wheeler, A. Mikelić, S. Lee**, Analytical and variational numerical methods for unstable miscible displacement flows in porous media, *J. Comput. Phys.*, 335 (2017), 444–496.

19. **A. Marciniak-Czochra, A. Mikelić**, Shadow limits via the renormalization group method and the center manifold method, Special Issue dedicated to Willi Jäger, *Vietnam J. Math.*, 45 (2017), 103–125.

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20. **S. Lee, A. Mikelić, M. F. Wheeler, T. Wick**, Phase-field modeling of proppant-filled fractures in a poroelastic medium, *Comput. Methods Appl. Mech. Engrg.*, 312 (2016), p. 509–541.

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22. **A. Mikelić, M. F. Wheeler, T. Wick**, Phase-field modeling of a fluid- driven fracture in a poroelastic medium, *Comput. Geosci.*, Vol. 19(2015), no. 6, 1171–1195.

23. **N. Grosjean, D. Iliev, O. Iliev, R. Kirsch, Z. Lakdawala, M. Lance, M. Michard, A. Mikelić**, Experimental and numerical study of the interaction between fluid flow and filtering media on the macroscopic scale, *Separation and Purification Technology*, Vol. 156, Part 1 (2015), p. 22–27.

24. **T. Carraro, C. Goll, A. Marciniak-Czochra, A. Mikelić**, Effective interface conditions for the forced infiltration of a viscous fluid into a porous medium using homogenization, *Comput. Methods Appl. Mech. Engrg.*, 292 (2015) 195–220.

25. **A. Mikelić, M. F. Wheeler, T. Wick**, A quasistatic phase field approach to fluid filled fractures, *Nonlinearity*, 28 (2015), 1371–1399.

26. **A. Mikelić, M. F. Wheeler, T. Wick**, A Phase-Field Method For Propagating Fluid-Filled Fractures Coupled To A Surrounding Porous Medium, *SIAM Multiscale Model. Simul.*, Vol. 13 (2015), no. 1, 367–398.

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28. **G. Allaire, R. Brizzi, J. F. Dufrêche, A. Mikelić, A. Piatnitski**, Role of non-ideality for the ion transport in porous media: derivation of the macroscopic equations using upscaling, *Physica D: Nonlinear Phenomena*, 282 (2014), p. 39–60.

29. **A. Mikelić, B. Wang, M. F. Wheeler**, Numerical convergence study of iterative coupling for coupled flow and geomechanics, *Comput Geosci*, Vol. 18 (2014), p. 325–341.

30. **A. Marciniak-Czochra, A. Mikelić**, A nonlinear effective slip interface law for transport phenomena between a fracture flow and a porous medium, *Discrete and Continuous Dynamical Systems - Series S (DCDS-S)*, Vol. 7 (2014), p. 1065-1077.
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33. **T. Carraro, C. Goll, A. Marciniak-Czochra, A. Mikelić**, Pressure jump interface law for the Stokes-Darcy coupling: Confirmation by direct numerical simulations, *Journal of Fluid Mechanics*, Vol. 732 (2013), p. 510-536.
34. **G. Allaire, R. Brizzi, J. F. Dufrêche, A. Mikelić, A. Piatnitski**, Ion transport in porous media: derivation of the macroscopic equations using up-scaling and properties of the effective coefficients, *Comput Geosci*, Vol. 17 (2013), no. 3, p. 479-496.
35. **A. Mikelić, M. F. Wheeler**, Convergence of iterative coupling for coupled flow and geomechanics, *Comput Geosci*, Vol. 17 (2013), no. 3, p. 455-462.
36. **G. Allaire, J. F. Dufrêche, A. Mikelić, A. Piatnitski**, Asymptotic analysis of the Poisson-Boltzmann equation describing electrokinetics in porous media, *Nonlinearity*, Vol. 26 (2013), p. 881-910.

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44. **S. Čanić, A. Mikelić, T.-B. Kim, G. Guidoboni**, Existence of a unique solution to a nonlinear moving-boundary problem of mixed type arising in modeling blood flow, *IMA Volume on Nonlinear Conservation Laws and Applications*, edited by Alberto Bressan, Gui-Qiang Chen, Marta Lewicka, and Dehua Wang, Vol 153 (2011), 235 -256.
45. **A. Farina, A. Fasano, A. Mikelić**, Non-Isothermal Flow of Molten Glass: Mathematical Challenges and Industrial Questions, chapter in *Mathematical Models in the Manufacturing of Glass*, editor A. Fasano, C.I.M.E. Summer School, Montecatini Terme, Italy 2008, Lecture Notes in Mathematics, 2011, Volume 2010/2011, 173-224.

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59. **C.J. van Duijn, A. Mikelić, I. S. Pop, C. Rosier**, Effective Dispersion Equations For Reactive Flows With Dominant Peclet and Damkohler Numbers, In: Guy B. Marin, David West and Gregory S. Yablonsky, editors: *Advances in Chemical Engineering*, Vol 34, Academic Press, 2008, pp. 1 – 45.

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