

## DAN MARCHESIN - LIST OF PUBLICATIONS

### PUBLICATIONS IN JOURNALS - (J)

1. "Time-dependent and time-independent scattering theory for asymptotically Coulomb systems", with M.O. Carrol, J. Math. Phys., 13, 982-990, 1972.
2. "The eigenvalues and eigenfunctions of a spherically symmetric anharmonic oscillator", with D. Isaacson; Comm. Pure Appl. Math., XXXI, 659-670, 1978.
3. "The scaling limit of the  $\phi_4^2$  field in the anharmonic oscillator", J. Math. Phys., 20, 830-836, 1979.
4. "Numerical methods for studying anharmonic oscillator approximations to the Quantum Field Theory", with D. Isaacson, P.J. Paes Leme, Int. J. Engng. Sci., 18, 341-349, 1980.
5. "Subgrid resolution of fluid discontinuities II", with J. Glimm, O. McBryan; J. Comput. Phys., 37, 336-354, 1980.
6. "Statistical Fluid Mechanics", with J. Glimm, O. McBryan, Comm. Math. Phys., 74, 1-13, 1980.
7. "A numerical method for two phase flow with unstable interface", with J. Glimm, O. McBryan, J. Comput. Phys., 39, 179-200, 1981.
8. "Unstable fingers in two phase flow", with J. Glimm and O. McBryan, Comm. Pure Appl. Math., XXXIV, 53-75, 1981.
9. "Front tracking for hyperbolic systems", with J. Glimm, E. L. Isaacson, O. McBryan, Adv. Appl. Math., 2, 91-119, 1981.
10. "Numerical analysis of spectral properties of coupled oscillator Schrödinger operators I - single and double well anharmonic oscillators", with D. Isaacson, E. L. Isaacson, P.J. Paes Leme, Math. Comp. 37, 273-291, 1981.
11. "Numerical Analysis of Spectral Properties of coupled oscillator Schrödinger Operators II - Two coupled anharmonic oscillators", with D. Isaacson, E. L. Isaacson, P.J. Paes Leme, SIAM J. Num. Anal., 19, 126-141, 1982.
12. "Shocks in gas pipelines", with P.J. Paes Leme, PUC/RJ, preprint, 1981, SIAM J. Sci. Stat. Comput., 4, 105-116, 1983.

13. "Critical behavior of the two-state Doubling Algorithm", with D. Isaacson, E. L. Isaacson, P.J. Paes Leme, PUC/RJ preprint 1981, *J. Math. Phys.*, 24, 41-45, 1983.
14. "Eigenvalues of 4, 8 and 16 coupled anharmonic oscillators", with D. Isaacson, E.L. Isaacson, P.J. Paes Leme, PUC/RJ preprint, 1982; *Phys. Rev. D.*, 27, n. 12, 3036-3039, 1983.
15. "Numerical Analysis of spectral properties of coupled oscillator Schrödinger operators III - The Doubling Algorithm", with D. Isaacson, E.L. Isaacson, P.J. Paes Leme, PUC/RJ preprint 1982, *SIAM J. Stat. Sci. Comp.*, 6, 158-168, 1985.
16. "Sequential numerical methods for the simulation of flow in petroleum reservoirs", with P.J. Paes Leme, J.C. Palmer, PUC/RJ preprint 1982, *Math. Appl. Comp.*, 2, no. 1, 47-74, 1983.
17. "Using exact solutions to develop an implicit scheme for the baroclinic primitive equations", *Mon. Wea. Rev.*, 112, 269- 277, 1984.
18. "On the Schrödinger equation with time-dependent electric fields", with R. Iório Jr., *Proceedings of the Royal Society of Edinburgh*, 96, 117-134, 1984.
19. "A fully implicit scheme for the barotropic primitive equations", with S.E. Cohn, D. Dee, E. Isaacson, G. Zwas, PUC/RJ preprint 1983, *Mon. Wea. Rev.*, 113, 436-448, 1985.
20. "Critical behavior of the doubling approximation of the  $\phi^4_2$  lattice field theories", with D. Isaacson, E. L. Isaacson, P.J. Paes Leme, PUC/RJ preprint 1983, *Phys. Rev. D* 31, 438-440, 1985.
21. "A Riemann problem in gas dynamics with bifurcation", PUC/RJ preprint, 1984; *Computers and Mathematics with Applications*, 12A, no. 4/5, 433-455, 1986.
22. "A factored implicit scheme for Numerical Weather Prediction", with J.M. Augenbaum, S.E. Cohn, D. Dee, E. Isaacson; *Comm. Pure Appl. Math.*, XXXVIII, 503-517, 1985.
23. "Application of the classification results to oil recovery problems", with P.J. Paes Leme, D.G. Schaeffer and M. Shearer, Appendix to "The Classification of 2x2 systems of non-strictly hyperbolic Conservation Laws, with application to Oil Recovery", *Comm. Pure Appl. Math.*, XL, 141-178, 1987.
24. "Solution of the Riemann Problem for a prototype  $2 \times 2$  system of non-strictly hyper-

- bolic conservation laws”, with M. Shearer, D.G. Schaeffer and P.J. Paes Leme, Arch. Rat. Mech. Anal., 97, 299-320, 1987.
25. “A model for two phase flow with hysteresis”, with H.B. Medeiros, P.J. Paes Leme, Contemporary Mathematics A.M.S., 60, 89-107, 1987.
  26. “Riemann Problems for non-strictly hyperbolic 2x2 systems of conservation laws” (Appendix), with M. Shearer, D. Schaeffer, B. Plohr, E. Isaacson, preprint 1987, Trans. A.M.S., 304, 267-306, 1987.
  27. “The Riemann problem near a hyperbolic singularity: Classification of quadratic Riemann problems I”, with E. L. Isaacson, B. Plohr and B. Temple; SIAM Journal of Applied Mathematics, 48, 1009-1032, 1988.
  28. “Transitional Waves for Conservation Laws”, with E. Isaacson, B. Plohr, SIAM J. Math. Anal., 21, 837-866, 1990.
  29. “Eliminating Grid-Orientation Errors in Alternating-Direction Implicit Schemes”, with J. Augenbaum, S.E. Cohn, Applied Numerical Mathematics, 8, 1-10, 1991.
  29. “Multiphase flow with singular Riemann Problems”, with E. L. Isaacson, B. Plohr, J. Blake Temple. Mat. Aplic. Comput., 11 , 147-166, 1992.
  30. “A global formalism for nonlinear waves in conservation laws”, with E. Isaacson, B. Plohr, C. F. Palmeira; Comm. Math. Phys., 146, pp. 505-552, 1992.
  31. “Scattering behavior of transitional shock waves”, with B. Plohr; K. Zumbrun; Proceedings of the II Workshop on Partial Differential Equations - Revista Matemática Contemporânea 3, 191-209, 1992.
  32. “Topology of Elementary waves for mixed systems of conservation laws”, with C. F. Palmeira; Journal of Dynm. and Diff. Equations, vol. 6, n. 3, 427-446, 1994.
  33. “Multiple viscous solutions for systems of conservation laws”, with A. V. F. de Azevedo, Transactions of the American Mathematical Society, vol. 347, n. 8, pp. 3061-3078, 1995.
  34. “Fundamental solutions of a system of conservation laws with a singular characteristic field”, with A. J. de Souza, Revista Matemática Contemporânea, vol. 8, 269-295, 1995.
  35. “Combustion Fronts in Petroleum Reservoirs”, with J.C. Da-Mota, W. B. Dantas and M. E. Gomes, Revista Matemática Contemporânea, vol. 8, 129-149, 1995.
  36. “Structurally Stable Riemann Solutions”, with B. Plohr and S. Schecter, 1994, J. Diff.

- Equations, vol. 126, 303-354, 1996.
37. “An Organizing Center for Wave Bifurcation in Multiphase Flow Models”, with B. Plohr and S. Schecter, *SIAM Journal on Applied Mathematics*, vol. 57, no. 5, pp. 1189-1215, 1997.
  38. “Nonuniqueness of Solutions of Riemann Problems”, with A. V. F. Azevedo, B. Plohr, K. Zumbrun, *Zeitschrift für Angewandte Mathematik und Physik (ZAMP)*, vol. 47, no. 6, pp. 977-998, 1997.
  39. “Bounds for solutions of the discrete algebraic Lyapunov equation”, with M. K. Tippett, *IEEE Transactions on Automatic Control*, vol. 44, no. 1, pp. 214-218, 1999.
  40. “Resonances for a Contact Wave in Systems of Conservation Laws”, with A. J. de Souza, *Computational and Applied Mathematics*, vol. 17, no. 3, pp. 317-341, 1998.
  41. “Conservation Laws Possessing Contact Characteristic Fields with Singularities”, with A. J. de Souza, *Acta Applicandae Mathematicae*, 51(3), pp. 353-364, 1998.
  42. “Hysteresis in Two-Phase Flow: a Simple Mathematical Model”, with H. B. Medeiros and P.J. Paes Leme (in memoriam), *Computational and Applied Mathematics*, vol. 17 (1), pp. 81-99, 1998, .
  43. “Bifurcation of Nonclassical Viscous Shock Profiles from the Constant State”, with A. Azevedo, B. Plohr and K. Zumbrun, *Communications in Mathematical Physics*, vol. 202, pp. 267-290, 1999.
  44. “Upper Bounds for the Solution of the Discrete Algebraic Lyapunov Equation”, with M. K. Tippett, *Automatica*, vol. 35, pp. 1485-1489, 1999.
  45. “ Low-Dimensional Representation of Error Covariance”, with S. Cohn, R. Todling and M. K. Tippett, *Tellus A*, vol. 52, No. 5, pp. 533-553, 2000.
  46. “Classification of Codimension-One Riemann Solutions”, with S. Schecter and B.Plohr, *Journal of Dynamics and Differential Equations*, vol. 13, no. 3, 2001.
  47. “Conditioning of the Stable, Discrete-Time Lyapunov Operator”, with S. Cohn, R. Todling and M. K. Tippett, *SIAM J. Matrix Anal. Appl.*, vol. 22, No. 1, pp. 56-65, 1999.
  48. “A Simple Model for Three-Phase Flow with Hysteresis”, with A. J. de Souza, P. Bedrikovetsky and P. Krause, *Matemática Contemporânea*, vol. 19, pp. 153-185, 2000.

49. “Long-lasting Diffusive Solutions for Systems of Conservation Laws”, with A. Azevedo, B. Plohr and K. Zumbrun, *Matemática Contemporânea*, vol. 18, pp. 1-29, 2000.
50. “Modeling Hysteresis in Porous Media Flow via Relaxation”, with B. Plohr, P. Bedrikovetsky and P. Krause, *Computational Geosciences*, vol. 5, no. 3, pp. 225-256, 2001.
51. “Wave Structure in WAG Recovery”, with B. Plohr, SPE 71314, *Society of Petroleum Engineering Journal*, vol. 6, no. 2, pp.209-219, June 2001.
52. “Geometric Singular Perturbation Analysis of Oxidation Heat Pulses for two-phase Flow in Porous Media”,with S. Schecter, *Bulletin of the Brazilian Mathematical Society*, vol. 32, no. 3, pp.237-270, 2002.
53. “Combustion Fronts in Porous Media”, with J. C. da Mota and W. B. Dantas, *SIAM Journal on Applied Mathematics*, vol. 62, no. 6, pp. 2175-2198, 2002.
54. “Capillary Instability in Models for Three-Phase Flow”, with A. Azevedo, B. Plohr and K. Zumbrun, *Zeitschrift für Angewandte Mathematik und Physik (ZAMP)*, vol. 53, n. 5, pp. 713-746, 2002.
55. “A Simplified Oxidation Model for Two-Phase Flow in Porous Media”, with J. C. da Mota, A. J. de Souza and P. W. Teixeira, *Engenharia Térmica (Thermal Engineering)*, Special Edition, no. 2, pp. 9-14, 2002.
56. “Combustion Fronts in Porous Media”, with J.C. da Mota and W.B. Dantas, *SIAM Journal on Applied Mathematics*, vol. 62, pp. 2175-2198, 2002.
57. “Damage Characterization of Deep Bed Filtration”, synopsis, with P. Bedrikovetsky, K. Tran, W. Broek, E. Rezende, A. Siqueira, A. Serra, and F. Shecaira, *Journal of Petroleum Engineering*, pp. 51, March 2002.
58. “Magnetocardiographic Location of Rotating Spiral Electrochemical Waves”, with R. W. dos Santos, B. Gundelach, and J. Valério, *Matemática Contemporânea*, vol. 22, no. 1, pp. 97-112, 2002.
59. “Combustion Fronts in Porous Media”, with J. C. da Mota and W. B. Dantas, *Transport in Porous Media*, vol. 62, pp. 2175-2198, 2002.
60. “Oxidation Heat Pulses in Two-Phase Expansive Flow in Porous Media”, with S. Schecter, *Zeitschrift für Angewandte Mathematik and Physik (ZAMP)*, vol. 54, pp. 48-83, 2003.

61. “Steam Injection into Water-Saturated Porous Rock”, with J. Bruining and C. J. van Duijn, submitted to Computational and Applied Mathematics, vol. aceito, 2004.
62. “Steam Condensation Waves in Water-Saturated Porous Rock”, with J. Bruining and S. Schechter, Qualitative Theory of Dynamical Systems, vol. 4, pp. 205-231, 2004.
63. “Computation of Riemann Solutions using the Dafermos Regularization and Continuation”, with S. Schechter and B. J. Plohr, Discrete and Continuous Dynamical Systems 10, pp. 965-986, 2004.
64. “The Inverse Problem of Determining the Filtration Function and Permeability Reduction in Flow of Water with Particles in Porous Media”, with A. C. Alvarez, P. G. Bedrikovetsky, and G. Hime, submitted to Transport in Porous Media, vol. aceito, 2005.
65. “Hyperbolicity Singularities in Rarefaction Waves”, with A. Mailybaev, submitted to Journal of Dynamics and Differential Equations, vol. aceito, 2006.
66. “A Fast Inverse Solver for the Filtration Function for Flow of Water with Particles in Porous Media”, with A. C. Alvarez, P. G. Bedrikovetsky, G. Hime, and J. R. Rodrigues, Inverse Problems, vol. 22, pp. 69-88, 2006.
67. “Wave Sequences for Solid Fuel adiabatic in-situ Combustion in Porous Media”, with A. J. de Souza and I. Y. Akkutlu, Computational and Applied Mathematics, vol. 25, pp. 27-54, 2006.
68. “Permeability Hysteresis in Gravity Counterflow Segregation”, with C. E. Schaerer, M. Sarkis and P. G. Bedrikovetsky, SIAM Journal on Applied Mathematics, vol. 66, pp.1512-1532, 2006.
69. “Analysis of Nitrogen and Steam Injection in a Porous Medium with Water”, with J. Bruining, Transport in Porous Media, vol. 3, pp. 251-281, 2006.
70. “Nitrogen and Steam Injection in a Porous Medium with Water”, with J. Bruining, Transport in Porous Media, vol. 62, pp. 251-281, 2006.
71. “The Riemann Solution for Adiabatic Injection of Steam and Water in a Porous Medium”, with J. Bruining and W. Lambert, Methods and Applications of Analysis, vol. 12, pp. 325-348, 2006.
72. “Dual-Family Viscous Shock Waves in  $n$  Conservation Laws with Application to Multi-Phase Flow in Porous Media”, with A. Mailybaev, Archives for Rational Mechanics

and Analysis, vol. 182, pp. 1-24, 2006.

73. “Numerical Simulation of Injectivity Loss in Stratified Reservoirs”, with J. S. Wrobel and A. Nachbin, accepted in *Computer Methods in Applied Mechanics and Engineering*, 2007.
74. “Maximal Oil Recovery by Simultaneous Condensation of Alkane and Steam”, with J. Bruining, *Physical Review E* 75, ISBN 036312, 2007.

## **PUBLICATIONS IN PROCEEDINGS (P)**

1. “Numerical methods for Meteorology and Climatology”, with E. Isaacson, G. Zwas, Fourth National Aeronautics and Space Administration Weather Climate Program Science Review, in *NASA Conference Publication 2076*, 183-190, January 1979.
2. “Subgrid Resolution of Fluid Discontinuities”, with J. Glimm, ARO Report 79-3, *Proceedings of the 1979 Army Numerical Analysis and Computers Conference*, 353-360 (1979).
3. “The Buckley-Leverett Equation: Theory, Computation and Application”, with J. Glimm, O. McBryan. *Third Symposium on Trends in Applications of Pure Mathematics to Mechanics*, Editor, R.J. Knops, Pitman, 104-110, September 1979.
4. “An Implicit scheme for Meteorology”, with E. Isaacson, *Atmospheric and Oceanographic Research Review - 1979 - NASA Technical Memorandum 80650*, Laboratory for Atmospheric Sciences, Modeling and Simulation Facility, GSFC, 74-79, January 1980.
5. “Spectral properties of systems with many degrees of freedom”, with D. Isaacson, E.L. Isaacson, P.J. Paes Leme, *Seminar on Numerical Analysis and its Applications to Continuum Physics*, ATAS SBM (12), 47-53 (1980).
6. “Applications of the Random Choice Methods to two phase problems in two dimensions”, with J. Glimm, E.L. Isaacson and O. McBryan, *Seminar on Numerical Analysis and its Applications to Continuum Physics*, Atas SBM-IMPA (12), 148-151 (1980).
7. “A Shock tracking method for hyperbolic systems I”, with J. Glimm, E.L. Isaacson, O. McBryan, ARO Report 80-3, *Proceedings of the 1980 Army Numerical Analysis and Computers Conference*, 1-18 (1980).

8. "Transients in pipes", with P.J. Paes Leme and R. Sampaio, Anais do VI Congresso Brasileiro de Engenharia Mecânica A-33, COBEM-PUC/RJ, Rio de Janeiro, Brasil, 341-353 (1981).
9. "High intensity ionization approximations: test of convergence in a one-dimensional model", with H.S. Antunes Neto, L. Davidovich, Coherence and Quantum Optics V, eds. L. Mandel and E. Wolf (Plenum, NY), 1109 (1984).
10. "Problemas de Riemann para equações hiperbólicas não homogêneas para o fluxo de fluidos", with P.J. Paes Leme, preprint PUC/RJ, Rio de Janeiro, August 1983. Atas do 14 Colóquio Brasileiro de Matemática, vol. 2, 273-299, Poços de Caldas, Brazil, July, 1983.
11. "The effect of compact implicit differencing in a baroclinic primitive equations model", with J.M. Augenbaum, S.E. Cohn, National Aeronautics and Space Administration Research Review, 1983, NASA Tech. Memo. 86053, 87-89 (1984).
12. "A factored implicit scheme for Numerical Weather Prediction with small factorization error", with J.M. Augenbaum, S.E. Cohn, in National Aeronautics and Space Administration Research Review, 1984, NASA Tech. Memo. 86219, 43-44, 1985.
13. "A fully implicit scheme for Global Numerical Weather Prediction", with J.M. Augenbaum, S.E. Cohn, E. Isaacson, Preprint Volume, Seventh Conference on Numerical Weather Prediction, Montreal, Canada, June 17-20, 1985, 423-430, 1985.
14. "A fully implicit random choice method for oil reservoir simulation", in ATAS do 15<sup>o</sup>. Colóquio Brasileiro de Matemática, 445-465, Poços de Caldas, Brazil, July, 1985, PUC/RJ preprint MAT 10/85.
15. "A new approach for calculation of formation of heat loss", with A. L. S. Souza, O. Pedrosa, Proceedings of II Simpósio Internacional sobre Recuperacion Mejorada de Crudo, Maracaibo, Venezuela, 1987.
16. "Riemann solution for non-strictly hyperbolic conservation laws", Proceedings of the Second International Conference on Nonlinear Hyperbolic Problems, vol. 24, 205-209, Aachen, FRG, March 14-18, 1988.
17. "A Note on the stability of eigenvalue degeneracy in nonlinear conservation laws of multiphase flow", with H. B. Medeiros, Proceedings of The Summer Section -AMS, Bowdoin College, Maine, August; Contemporary Mathematics vol. 100, 215-224, 1988.



18. "The Riemann problem for compositional three-phase flow in porous media", with A.J. de Souza, Proceedings of the Workshop "Multidimensional Hyperbolic Problems and Computations", IMA, 1989.
19. "Transitional shock waves", with E. Isaacson; B. Plohr, Proceedings of the Summer Section - AMS, Bowdoin College, Maine, Contemporary Mathematics, vol. 100, 125-145, 1989.
20. "Multiple viscous profile Riemann solutions in mixed elliptic- hyperbolic models for flow in porous media", with A. V. Azevedo, Proceedings of the Workshop Ellipticity in Evolution Equations, EUA, Springer Verlag, vol. 27, 1-17,1990.
21. "Singularities in Contact Curves", with A. J. de Souza, Proceedings of the V International Conference on Hyperbolic Problems, Stony Brook, World Scientific Publishing Co., 300-306, 1996.
22. "Nonuniqueness of Solutions of Riemann Problems caused by 2-Cycles of Shock Waves", with A. V. F. Azevedo, B. Plohr and K. Zumbrun, Proceedings of the V International Conference on Hyperbolic Problems, World Scientific Publishing Co., 43-51, 1996.
23. "Traveling Waves for Combustion in Porous Media", with J. C. da Mota and W. B. Dantas, Proceedings of the Seventh International Conference on Hyperbolic Problems, Theory, Numerics, Applications - Zürich, vol.1, pp. 177-187, Birkhäuser Verlag, 1999.
24. "Magnetic Localization of Reentrant Activation in Isolated Rabbit Atrium", with E. Costa Monteiro, P. Costa Ribeiro, E. Andrade Lima, C. Hall Barbosa, P.H. Ornelas, E.G. Cavalcanti, S. F. Santos, B. Plohr, B. Gundelach, A. Marchesin and M. Brio, Proceedings of Biomag-98, Sendai, Japan. In: Recent Advances in Biomagnetism, Tohoku University Press, pp. 1018-1021, Sendai, 1999.
25. "Wave Structure in WAG Recovery", with B. Plohr, SPE 56480, Proceedings of the 1999 SPE Annual Technical Conference and Exhibition, Houston, USA, October 3-5, 1999.
26. "Inverse Magnetocardiography for Reentry Currents", with M. Brio, E. Costa Monteiro, A.C. Bruno and P. Costa Ribeiro, Proceedings of the Tenth International Conference on Biomagnetism: Biomag 96, Santa Fe, USA, 1996. Editors: Cheryl J. Aine, Yoshio Okada, Gerhard Stroink, Stephen J. Swithenby, Charles C. Wood. New York:,

Springer-Verlag, p. 92-95, 2000.

27. “Riemann Solutions for a Model of Combustion in Two-Phase Flow in Porous Media”, with J.C. da Mota and W.B. Dantas, In: International Conference on Hyperbolic Problems, International Series of Numerical Mathematics, Proceedings of Eighth International Conference on Hyperbolic Problems, Alemanha, ISBN 3-7643-6710-5, vol. 141, 2000.
28. “Induced Atrial Flutter in Rabbit Heart Tissue and Inverse Magnetocardiography”, with E. Costa Monteiro, E. Andrade Lima, P.H. Ornelas, R.S. Cruz, A.C. Bruno, A.P. Picon, G.S. Kühner, C. Kelber, P. Costa Ribeiro, M. Brio, T.T. Leite, Proceedings of the Tenth International Conference on Biomagnetism: Biomag 96, Santa Fe, USA, 1996. Editors: Cheryl J. Aine, Yoshio Okada, Gerhard Stroink, Stephen J. Swithenby, Charles C. Wood. New York:, Springer-Verlag, p. 205-209, 2000.
29. “Location of Reentry Currents in Isolated Rabbit Cardiac Tissues through Inverse Magnetocardiography”, with E. Andrade Lima, R. W. dos Santos, E. Costa Monteiro, C. Hall Barbosa, 3<sup>rd</sup> International Symposium on Noninvasive Functional Source Imaging within the Human Heart and Brain, Innsbruck, Austria, September 6-9, 2001. In: Biomedizinische Technik: Biomedical Engineering, v. 46, n. 2, p. 63-65, 2001.
30. “Analysis of a Secondary Activity during Reentry Propagation in Rabbit Atrial Tissue”, with E. Andrade Lima, C. Hall Barbosa, E. Costa Monteiro, J. Haueisen, Proceedings of the Thirteenth International Conference on Biomagnetism: Biomag 2002, Jena, Germany, August 2002. Editors: Hannes Nowak, Jens Giessler, Ralph Huonker. Berlin, Offenbach: VDE Verlag CMBH, ISBN 3-8007-2714-5, p. 506-508, 2002.
31. “Extraction of Atrial Cardiac Activity from MCG Recordings of Periodic Tachyarrhythmias in Humans”, with E. Andrade Lima, E. Costa Monteiro, B. Gundelach, Proceedings of the Thirteenth International Conference on Biomagnetism: Biomag 2002, Jena, Germany, August 2002. Editors: Hannes Nowak, Jens Giessler, Ralph Huonker. Berlin, Offenbach: VDE Verlag CMBH, ISBN 3-8007-2714-5, p. 1030-1032, 2002.
32. “Hysteresis in Three-Phase Porous Media”, with B. Plohr, P. Bedrikovetsky, J. E. Altoé F., A. J. de Souza, 8th European Conference on the Mathematics of Oil Recovery, Proceedings, E15, ISBN 90-73781-24-8, Freiberg, Germany, September 3-6,

- 2002.
33. “Porous Media Deposition Damage from Injection of Water with Particles”, with P. Bedrikovetsky, G. Hime, A. Alvarez, A. O. Marchesin, A.G. Siqueira, A. L. S. Souza, F. S. Shecaira, J. R. Rodrigues, 8th European Conference on the Mathematics of Oil Recovery, Proceedings, E18, ISBN 90-73781-24-8, Freiberg, Germany, September 3-6, 2002.
  34. “Transitional Waves in Three-Phase Flows in Heterogeneous Formations”, with E. Abreu, F. Furtado, F. Pereira, 15th International Conference on Computational Methods in Water Resources (CMWR XV), Chapel Hill, North Carolina, June 13-17 2004. Proceedings, Computational Methods in Water Resources 2004, I.5 Unsaturated and Multiphase Flow, Series: Developments in Water Science, Vol. I, 609-620, Elsevier, ISBN 0-444-51839-8, 2004, Editors: C. T. Miller, M. W. Farthing, W. G. Gray and G. F. Pinder.
  35. “A Determinação das Funções de Filtração e Redução de Permeabilidade em Meios Porosos a partir de Dados de Laboratório”, XXXI Congresso Brasileiro de Sistemas Particulados (ENEMP 2004), Uberlândia, MG, October 24-27, 2004.
  36. “Three-Phase Immiscible Displacement in Heterogeneous Petroleum Reservoirs”, with E. Abreu, J. Douglas, F. Furtado and F. Pereira, Proceedings of Computational Science and Engineering, 2004.
  37. “Three-Phase Flow in Petroleum Reservoirs”, with E. Abreu, F. Furtado, F. Pereira, Proceedings of the Conference on Analysis, Modeling and Computation of PDE and Multiphase Flow, Stony Brook University, Stony Brook, NY, August 3-5, 2004, p. 3-14. Editors: Xiaolin Li, Yan Yu.
  38. “Dual-Family Viscous Shock Waves in Systems of Conservation Laws: A Surprising Example”, with A. A. Mailybaev, Proceedings of the Conference on Analysis, Modeling and Computation of PDE and Multiphase Flow, Stony Brook University, Stony Brook, NY, August 3-5, 2004, p. 125-135. Editors: Xiaolin Li, Yan Yu.
  39. “Numerical Method for Nitrogen and Steam Injection in a Porous Media with Water, with J. Bruining, D. Albuquerque e W. Lambert, Proceedings of Rio Oil Gas, Rio de Janeiro, 2004.
  40. “The Effect of Alkane Boiling Temperature in Heavy Oil Recovery by Steam”, with J.

Bruining, Proceedings of the EAGE Improved Oil Recovery Symposium, Budapest, April 25-27, 2005.

41. “Numerical Model for Injectivity Loss in Stratified Porous Media”, with a. Nachbin e J. S. Wrobel, Proceedings of CILAMCE - XXVI Iberian Latin-American Congress, 2005.
42. “Nonclassical Topological Construction of Riemann Solutions, with A. Azevedo, C. Eschenazi e C. Palmeira, Proceedings of the Tenth International Conference on Hyperbolic Problems: Theory, Numerics, and Applications, Yokohama, 2006.
43. “Inverse Problem for Systems of Conservation Laws Modeling the Flow of Water with Particles in Porous Media, with A. Alvarez e G. Hime, Proceedings of Eleventh International Conference on Hyperbolic Problems: Theory, Numerics, and Applications, Lyon, 2006.

## **DOCTORAL STUDENTS**

1. H. FRID NETO, 1986.
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14. W.J. LAMBERT, 2006.

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