

To appear

Anne Bagué , Daniel Fuster, Stéphane Popinet , Ruben Scardovelli and Stéphane Zaleski, Instability growth rate of two-phase mixing layers from a linear eigenvalue problem and an initial value problem *Physics of Fluids*.

A. Revues avec comité de lecture - articles ordinaires *Refereed Journals*

72 Gaurav Tomar , Daniel Fuster, Stéphane Zaleski, and Stéphane Popinet, Multiscale simulations of primary atomization using Gerris 2010 *Computers and Fluids, on line*.

71 Fullana J.-M. and Zaleski S., A branched one-dimensional model of vessel networks. *Journal of Fluid Mechanics*, 2009. **621**: p. 183–204

70. S. Afkhami, S. Zaleski and M. Bussmann 2009 A mesh-dependent model for applying dynamic contact angles to VOF simulations, *J. Comput. Phys*, vol. **228** , 5370–5389.

69. A. Bagué, T. Boeck , D. Fuster , L. Le Moyne , A. Leboissetier, S. Popinet , P. Ray , R. Scardovelli and S. Zaleski 2009 Simulation of primary atomization with an octree adaptive mesh refinement and VOF method. *International J Multiphase Flow*. Vol. **35**, Pages 550-565.

68. A. Cervone, S. Manservigi, R. Scardovelli, and S. Zaleski 2009, A geometrical predictor-corrector advection scheme and its application to the volume fraction function, *Journal of Computational Physics*, **228** , Pages 406-419, DOI: 10.1016/j.jcp.2008.09.016.

67 Devauchelle O., Josserand C., Lagrée P.Y., and Zaleski S. 2008, Mobile Bank Conditions for Laminar Micro-Rivers , *Comptes Rendus Geosciences*, **340**, 732-740, DOI: 10.1016/j.crte.2008.07.010.

66 Devauchelle O., Josserand C., Lagrée P.Y., and Zaleski S. 2007, Morphodynamic modeling of erodible laminar channels. *Physical Review E*, **76**, 056318.

65 Olivier Devauchelle, Christophe Josserand and Stéphane Zaleski 2007, Forced dewetting on porous media, *J. Fluid Mech*. **574**: 343-364

64. Eugenio Aulisa, Sandro Manservigi, Ruben Scardovelli and Stéphane Zaleski 2007 Interface reconstruction with least-squares fit and split advection in three-dimensional Cartesian geometry *J. Comput. Phys*, **225**, pp 2301-2319

63. Thomas Boeck, Jie Li, Enrique López-Pagés, Philip Yecko and Stéphane Zaleski 2007, Ligament formation in sheared liquid–gas layers , *Theor. Comput. Fluid Dynamics*, Vol 21, pp 59-76.

62. Thomas Boeck and Stéphane Zaleski 2005 Instability of two-phase mixing layers: analysis of exact and approximate base flows from boundary layer theory, *Journal of Non-Equilibrium Thermodynamics*, **30**, 215

61. T. Boeck and S. Zaleski 2005 Viscous versus inviscid instability of two-phase mixing layers with continuous velocity profile, *Phys. Fluids*, **17**, 032106-1-032106-11.

60. P. Yecko, S. Zaleski 2005: Transient growth in two-phase mixing layers *Journal of fluid mechanics*, **528** 43-52 .

59. Josserand C., Lemoyne L., Troeger R. and Zaleski S. 2005 Droplet impact on a dry surface : triggering the splash with a small obstacle , *Journal of fluid mechanics*, **524** 47 - 56

58. L. Gottesdiener, D. Gueyffier, M. Abdelouahab, R. Gatignol and S. Zaleski 2004, Numerical Simulations of large falling drops, *Int J. for Numer. Meth. In Fluids*, **45**, 109-123 (2004).
57. J.M Fullana, F. Cros, P. Flaud, S. Zaleski, 2003, Filling a collapsible tube, *J. Fluid Mech.* 494, 285-296
56. Eugenio Aulisa, Sandro Manservigi, Ruben Scardovelli and Stephane Zaleski, 2003, A geometrical area-preserving Volume-of-Fluid method, *J. Comput. Phys.*, 192, Pages 355-364.
55. Christophe Josserand and Stéphane Zaleski 2003 Droplet splashing on a thin liquid film, *Phys. Fluids*, 15, pp. 1650-1657 .
54. Y. Renardy, S. Popinet, L. Duchemin, M. Renardy, S. Zaleski, C. Josserand, M.-A. Drumright-Clarke, D. Richard, C. Clanet and D. Quéré, 2003, Pyramidal and toroidal water drops after impact. *J. Fluid Mech.* 484, :69-83 .
53. Ruben Scardovelli and Stephane Zaleski, 2003, Interface Reconstruction with Least-Square Fit and Split Eulerian-Lagrangian Advection, *Int. J. Numer. Meth. Fluids*, Volume: 41, Pages: 251-274.
52. A. Leboissetier, S. Zaleski 2003, Influence des conditions aux limites amont turbulentes sur l'atomisation, *Combustion (France) Vol 2* pp 75-86.
51. Philip Yecko, Stéphane Zaleski, and Jose-Maria Fullana 2002: Viscous modes in two-phase mixing layers, *Phys. Fluids*, Vol. 14, pp. 4415-4122.
50. L. Duchemin, S. Popinet, C. Josserand, and S. Zaleski 2002: Jet formation in bubbles bursting at a free surface, *Phys. Fluids*, Vol. 14, pp. 3000-3008
49. S. Popinet and S. Zaleski, 2002: Bubble collapse near a solid boundary: A numerical study of the influence of viscosity, *J. Fluid Mech* vol. 464 , pp 137-163
48. Alexandre Hugot, Philippe Joseph, Bruno Savoye, Stephane Zaleski
Nouvelle modélisation des écoulements gravitaires sous-marins : application à l'effondrement de Nice de 1979 *Comptes rendus de l'Académie des sciences - Série IIa - Sciences de la Terre et des planètes* 2001 - Volume 333 (page 133)
47. A. Menchaca-Rocha, A. Martínez-Dávalos, R. Núñez , S. Popinet and S. Zaleski 2001: Coalescence of liquid drops by surface tension, *Phys. Rev. E* 63, 046309 (2001)
46. Hugot A., Zaleski S. and Joseph P. 2000: Phenomenological modeling of catastrophic dilute gravity flows, *Oil & Gas Science and Technology, Rev IFP* 55, 471-483.
45. Scardovelli R. et Zaleski S. 2000: Analytical relations connecting linear interfaces and volume fractions in rectangular grids, *J. Comput. Phys.* 164, 228-237.
44. Blonbou, R. Laverdant A., Zaleski S. et P. Kuentzmann 2000: Active adaptive control using neural networks, *Combustion Science and Technology*, 156, pp. 25-47.
43. Ory E., Yuan H., Prosperetti A., Popinet S. et S. Zaleski 2000: Growth and collapse of a vapor bubble in a narrow tube, *Phys. Fluids* 12, 1268-1277.
42. Hugot A., Zaleski S. and Joseph P. 1999: Dilute Gravity Flows: a phenomenological model in thin layer theory, *C. R. Acad. Sci. Paris sér II b*, 327 457-462
41. Gueyffier D., Li J. , Nadim A., Scardovelli S. et Zaleski S. 1999: Volume of Fluid interface tracking with smoothed surface stress methods for three-dimensional flows, *J. Comput Phys.*, 152, 423-456.

40. Popinet S. et Zaleski S. 1999: A front-tracking algorithm for accurate representation of surface tension, *Int. J. Numer. Meth. Fluids* 30, 775-793 .
39. Fullana J.M. et Zaleski S. 1999: Stability of a growing end-rim in a liquid sheet of uniform thickness, *Phys. Fluids*, 11, 952-954.
38. Chen G., Kharif C., Zaleski S. et J. Li 1999: Two dimensional simulations of breaking waves, *Phys. Fluids*, 11, 121-133.
37. Scardovelli R. et Zaleski S. 1999: Direct Numerical simulation of free-surface and interfacial flow, *Annu. Rev. Fluid Mech.*, 31, 567-603.
36. Gueyffier D. et Zaleski S. 1998: Formation de digitations lors de l'impact d'une goutte sur un film liquide, *C. R. Acad. Sci. Paris sér II b*, 326, 839-844.
35. Fullana, J.M. et Zaleski S. 1997: Method for Total Inversion Applied to an Extended Hydrodynamical System, *Phys. Rev. Lett.* 79, 3182-3185.
34. Fullana, J.M., Legal, P., Rossi, M. et Zaleski S. 1997: Identification of parameters in amplitude equations describing coupled wakes. *Physica D* 102, 37-56.
33. Pot V., Appert C., Melayah A., Rothman D. et Zaleski S. 1996: Interacting lattice-gas automaton study of liquid-gas properties in porous media, *J. Physique II (France)* 6, 1517-1534.
32. Isabelle Durand-Zaleski, Sylvie Bastuji-Garin, Stéphane Zaleski, Bertrand Weil et Guy Rostoker 1996: A cost analysis of the prevention of end-stage renal disease: the case of immunoglobulin therapy for IGA nephropathy. *Medical Decision Making* 16, 326-332.
31. Nadiga B.T. et Zaleski S. 1996: Investigations of a Two-phase Fluid Model, *Euro. J. Mech. B/Fluid*, 15, 885-896.
30. Zaleski S., Li Jie et Succi S. 1995: Two-dimensional Navier-Stokes simulation of Deformation and Break-up of liquid patches, *Phys. Rev. Lett.* 75, 244-247.
29. Bunks C., Saleck, F. M., Zaleski S. and Chavent G. 1995: Seismic waveform inversion by the multigrid method, *Geophysics* 60, 1457-1473.
28. Rothman D. and Zaleski S. 1994: Lattice-gas models of phase separation: interfaces, phase transitions and multiphase flow, *Rev Mod. Phys.* 66, 1417-1480.
27. di Pietro L. B., Melayah A. et Zaleski S. 1994: Modelling water infiltration in unsaturated porous media by interacting lattice-gas cellular automata, *Water Resources Research*, 30, 2785-2792.
26. Lafaurie B., Nardone C. Scardovelli, R. Zaleski S. and Zanetti, G. 1994: Modelling merging and fragmentation in multiphase flows with SURFER, *J. Comp. Phys.* 113, 134-147.
25. Durand-Zaleski I. et Zaleski S. 1994: DEAL-ing and discounting: a simple way to compute the accrued cost of preventive strategies, *Medical Decision Making*, 14, 98-103.
24. Appert, C. et Zaleski, S. 1993: Dynamical liquid-gas phase transition, *J. de Physique II, France*, 3, 309-337.
23. Appert C., d'Humières D. et Zaleski, S. 1993: Gaz sur réseau avec interactions minimales, *C. R. Acad. Sci Paris, Sér. II*, 316, 569-574.

22. Zaleski, S. and Julien P. 1992: Numerical simulation of salt diapir formation in small and extended geometries, *Tectonophysics*, 206, 55-69.
21. Zaleski S. 1991: La transition vers le régime de turbulence thermique dure en convection de Rayleigh-Bénard, *C. R. Acad. Sci. Paris*, 313, Sér. II b, 1099-1103.
20. Gunstensen A.K., Rothman D.H. Zaleski S. et Zanetti G. 1991: A lattice-Boltzmann model of immiscible fluids, *Phys. Rev A*. 43, 4320-4327.
19. Appert C. et Zaleski S. 1990: Lattice Gas with a liquid-gas transition, *Phys. Rev. Lett.* 64, 1-4.
18. Rothman D.H. et Zaleski S. 1989: Spinodal decomposition in a Lattice Gas Automaton, *J. de Physique* 50, 2167-2174.
17. Zaleski S. 1989 Low frequency noise and phase fluctuations in large convective systems, *Phys. Rev.* A39, 3088-3093.
16. Zaleski S. 1989: A stochastic model for the large scale dynamics of some fluctuating interfaces, *Physica D*, 34, 427-438.
15. Presson G.R. Jr, Kirk K. R., Haselby K. A., Linehan J. H. , Zaleski S. et Wagner W. W. Jr 1989: Fate of air emboli in the pulmonary circulation, *J. Appl. Physiol.* 67, 1898-1902.
14. Castaing, B., Gunaratne G., Heslot, F., Kadanoff L., Libchaber A. , Thomae, S., Wu Xiao-Zhong, Zaleski S. et Zanetti, G. 1989: Scaling theory of hard thermal turbulence in Rayleigh-Bénard convection, *J. Fluid Mech.* 204, 1-30.
13. Rucklidge, A. et Zaleski, S. 1988: A microcanonical model for interface formation, *J. Stat. Phys.* 51, 299.
12. Burges C. et Zaleski, S. 1987: Buoyant mixtures of cellular automaton gases, *Complex Systems* 1, 31.
11. Hyman J.M., Nicolaenko, B. et Zaleski, S. 1986: Order and complexity in a model of weakly turbulent fluid interfaces, *Physica D*, 23, 265.
10. Zaleski S., Lallemand, P. et Tabeling P. 1985: Frequency selection in spiraling vortex flow, *Phys Rev* A32, 655.
9. Zaleski S. et P. Lallemand 1985: Scaling laws in phase turbulence, *J. de Physique Lett.* 46, L-793.
8. Pomeau Y. Zaleski, S. et Manneville P. 1985: Axisymmetric cellular structures revisited, *Z.A.M.P.* 36, 367.
7. Zaleski , S., Pomeau, Y. et A. Pumir 1984: Optimal merging of rolls with a plane boundary, *Phys. Rev.* A29, 366.
6. Zaleski, S. 1984: Cellular patterns with boundary forcing, *J. Fluid Mech.* 149, 101.
5. Spiegel, E. et S. Zaleski 1984: Shear-induced instability in reaction-diffusion systems, *Phys. Lett.* 106A, 355.
4. Pomeau, Y., Zaleski, S. et P. Manneville 1983: Dislocation motion in cellular structures, *Phys. Rev. A* 27, 2710.
3. Pomeau, Y. et Zaleski, S., 1983: Pattern selection in a slowly varying environment, *J. de Physique Lett.*, Paris, 44, L-135.

2. Pomeau, Y. et Zaleski, S., 1981: Wavelength selection in one dimensional cellular structures, J. de Physique, Paris, 42, 515.

1. Pomeau, Y. et Zaleski, S., 1980: Sélection du nombre d'onde dans les structures cellulaires convectives, C. R. Acad. Sc. Paris, 290, 505.

**A2 Actes de conférences publiés dans une revue avec comité de lecture.
Conference proceedings in Refereed Journals**

6. Daniel Fuster, Gilou Agbaglah, Christophe Josserand, Stéphane Popinet and Stéphane Zaleski 2009 Numerical simulation of droplets, bubbles and waves: state of the art, *Fluid Dynamics Research* **41**, 065001.

5. Yecko P. and Zaleski S. 2000: Two-phase shear instability: waves, fingers and drops. Proceedings of the fourteenth international annual Florida workshop in Nonlinear Astronomy and Physics "Astrophysical Turbulence and Convection", University of Florida Feb. 1999, Annals of the New York Academy of Sciences, **898**, 127-143.

4. Fullana, J.M., Rossi, M. et Zaleski S. 1997: Parameter identification in noisy extended systems: a hydrodynamic case, *Physica D*, **103**,564-573.

3. Appert C., Pot V. et Zaleski S. 1996: Liquid-gas models on 2D and 3D lattices, Fields Institute Communications, American Mathematical Society, **6**, 1-12.

2. Appert, C. d'Humières D. , Pot V. et Zaleski S. 1994: Three-dimensional lattice gas with minimal interactions, *Transport Theory and Stat. Phys.*, **23**, 107-122.

1. Appert C. Rothman D.H. et Zaleski S. 1991: A liquid-gas model on a lattice, *Physica D*, 47, 85-96.

B1 Monograph

Rothman, D. H. et S. Zaleski 1997, *Lattice Gas Cellular Automata*, Cambridge University Press, collection Aléa-Saclay.

Tryggvason G., Scardovelli R. et Zaleski S. 2010 *Direct Numerical Simulations of Gas-Liquid Multiphase Flows*, Cambridge University Press, à paraître.

B2 Book editing

Cellular Structures in Instabilities, Lecture Notes in Physics n° 210, J.E. Wesfreid et S. Zaleski Ed., Springer, Berlin 1984.

B3 Chapters in books

M. Marengo, R. Scardovelli, C. Josserand and S. Zaleski: 2001: Isothermal drop-wall interactions: introduction to experimental and numerical studies, in *The Navier-Stokes equations: theory and numerical methods*, Lecture Notes in Pure and Applied Mathematics, ed. R. Salvi, Marcel Dekker, Inc

GM Bianchi, F Minelli, R. Scardovelli et S. Zaleski, 2008, 3D Large Scale Simulation of the High-Speed Liquid Jet Atomization, SAE 2007 Transactions Journal of Engines, vol. 116, pp 333-346, publication date April 2008.

C1 Invited conferences to which I submitted a proceedings paper Conférences invitées avec publication

6. S. Zaleski, High resolution simulations of two-phase mixing layers and ligament formation, IUTAM symposium on "Recent Advances in Disperse Multiphase Flow Simulation" Argonne National Laboratory, IL, October 4-7, 2004, published under the title "Direct Numerical Simulation of Droplet Formation and Breakup", in *IUTAM Symposium on Computational Approaches to Multiphase Flow, Proceedings of an IUTAM Symposium held at Argonne National Laboratory, October 4-7, 2004*, Springer-Verlag, Series: Fluid Mechanics and Its Applications, Vol. 81 Balachandar, S.; Prosperetti, A. (Eds.) 2006
5. S. Zaleski and T. Boeck, Direct numerical simulation of high speed jet atomization. International Conference on Liquid and Spray Systems (ICLASS) 2003, Sorrento, Italie, 14-18 Juillet 2003, Publication sur CD-ROM de la conférence.
4. S. Popinet and S. Zaleski, 1999: Coupling of radial and translational motion in small viscous bubbles, 3rd ASME/JSME Joint Fluids Engineering Conference, San Francisco, Californie, USA, 18-23 Juillet 1999.
3. Zaleski S. 1997: Efficient numerical methods for atomization studies, JSME centennial meeting, Tokyo 17-19 juin, Matsumoto and Prosperetti editors.
2. Zaleski, S.: Thermal convection at high Rayleigh number, *Geophysical and Astrophysical Convection*, NCAR, Boulder, 8-10 octobre 1995, Actes: Peter A. Fox et Robert M. Kerr Ed., Gordon and Breach, 2000.
1. Zaleski, S., Li, J., Scardovelli S., Succi S. et Zanetti G. 1995: Direct numerical simulation of flows with interfaces, *Second international conference on Multiphase flow*, Kyoto, Avril 1995.

C2 Conférences internationales invitées sans publication

1. Zaleski S. 1988: Scaling theory of hard thermal turbulence in Rayleigh-Bénard convection, Conférence *Advances in fluid turbulence*, Los Alamos, Mai 1988.
2. Zaleski S. 1988: Scaling of hard thermal turbulence at high Rayleigh number, *Nonlinear variability in Geophysics 2*, Ancienne École Polytechnique, Paris, Juin 1988.
3. Zaleski S. 1988: Patterns in thermal convection at High Rayleigh number, *Euromech Colloquium 236, Pattern selection and spatiotemporal chaos in fluids*, Cambridge, England Sept. 1988.
4. Zaleski S. 1990: Lattice gases: a new approach to single and multiphase flow simulations, *Computational methods in water resources*, Venise, Italie 11- 15 Juin 1990.
5. Zaleski S. 1992: Model for 3D phase separation, workshop on cellular automata models for astrophysical phenomena, Han sur Lesse, 19-21 octobre 1992.
6. Zaleski S. 1993: High Speed breakup of liquid-gas interfaces, workshop on fragmentation phenomena, Centre de Physique des Houches, 12-17 Avril 1993.
7. Zaleski S. 1997 : Efficient numerical methods for multiphase flow simulation, ASME fluid division summer meeting, Vancouver, 22-26 june 1997, Forum Session on multiphase flows, chairmen Prosperetti and Tryggvason.
8. Zaleski S. 1998: Modélisation des interfaces et des surfaces libres, *conférence plénière, Congrès d'Analyse Numérique (CANum) 1998*, Arles, 18-22 Mai 1998.

9. Zaleski S. 1999: "Direct Numerical Simulation of Multiphase Flow", SFB-Kolloquim "Modelling, Simulation and Design in Process Engineering", Stuttgart, 11-12 Octobre 1999, organisé par le SFB 412, Prof. ED Gilles.
10. Zaleski S. 2002: "Particle and lattice methods for flow simulation" ASME-FED Summer Meeting, 14-17 Juillet 2002 Montreal, Canada.
11. Zaleski S. 2002: "Numerical investigations of sheared liquid-gas interfaces" ILASS-Europe 2002, Zaragoza, Espagne, 9-11 Septembre 2002.
12. Zaleski S. 2002 The Instability of High-Velocity Two-Phase Mixing Layers , FUNDAMENTALS OF FLUID FLOW 2002, BP Institute, Cambridge, Angleterre, 11 - 13 Dec 2002
13. Zaleski S. 2003 Direct numerical simulation of multiphase flow'Workshop Direct and Large-Eddy Simulation-V, Garching, Germany August 27-29, 2003
14. Zaleski S. 2003 Numerical computation of high speed two phase mixing layers. ICIAM 2003, Sydney 7-11 July 2003.talk in Minisymposium #2477 (John Strain : Modelling and Computation of Complex Material Interfaces)
15. Zaleski S. 2003, Direct numerical simulation of interfacial flow, MACSI-NET conference WG17: Geometric modelling, CAD, Evolving Interfaces and Surfaces, Workshop on Industrial Challenges in the simulation of evolving interfaces, Vrije Universiteit Brussels, Bruxelles, 1-2 Sept 2003.
16. S. Zaleski, Thomas Boeck and Ruben Scardovelli 2003 , Recent advances in volume of fluid methods and applications to atomization, Japanese-European Two-Phase Flow Group Meeting, Certosa di Pontignano, Siena, Italy, 21-27 September 2003.
17. S. Zaleski 2004 Direct numerical simulation of multiphase systems Final Presentation of the DFG Research Program, 18.-19.03.2004, Dortmund.
18. C. Josserand and S. Zaleski 2004 Three dimensional numerical simulation of splashing, Euromech 450, Studies on Splashes A century after A.M. Worthington 27-29 October 2004 in Marseille.
19. S. Zaleski 2005: Breaking, Merging and Splashing Bubbles: The art of fluid interface CFD . In : Computational Fluid Dynamics in Chemical Reaction Engineering IV, Barga, Italie , 19-24 Juin 2005. Conférence plénière invitée.
20. S. Zaleski 2005: Simulation of three dimensional focusing in splashes and atomizing liquid-gas mixing layers in : Focusing Stress in a Soft Interface, November 17-19, 2005, University of Chicago, USA,
21. S. Zaleski , 2006 Recent advances in the numerical simulation of droplet collisions and impacts, conférence invitée, Euromech Colloquium 479 Numerical Simulation of Multiphase Flow with Deformable Interfaces August 14-16th, 2006, The Pier, Scheveningen, The Netherlands
22. R. Scardovelli and S. Zaleski 2006 Recent advances in VOF simulation of two-phase flow, 4th Japanese-European Two-Phase Flow Group Meeting, September 24-28, 2006, Kanbaikan, Doshisha University, Kyoto, JAPAN
23. S Zaleski 2006 Three-Dimensional Spatial Development Of Atomizing Jets: Theory, Simulation And Elementary Processes , Fifth International Conference on Computational Fluid Dynamics in the Process Industries 13-15 December 2006, Hilton on the Park, Melbourne, Australia.
24. S. Zaleski 2007 Recent Advances in the Simulation of Fluid Interfaces and Applications to Droplet atomization and Splashing, International Conference on Fluid Dynamics, ICFD 2007 Conference 26-29 March 2007, Reading, UK.

25. S. Zaleski 2007 Simulation of Jet and Droplet Formation in Droplet Impact and Atomizing Jets, IUTAM symposium on Recent Advances in Multiphase Flows: Numerical and Experimental, Istanbul, Turkey, June 11 - 14, 2007.

26. S. Zaleski 2007 The Taylor-Culick end rim and mechanics of droplet formation, Symposium on Two-phase incompressible flow : modelling aspects and methods for numerical simulation, RWTH Aachen, 25-27 June 2007.

27. S. Zaleski 2007 Modelling ligament-forming instabilities in jet atomisation, Autumn meeting of The Combustion Institute (British Section) held on Wednesday 26 September 2007 at Imperial College London,

28. S. Zaleski 2008, Numerical simulation of droplets, bubbles and waves: state of the art. 40-year anniversary conference of the Japan Society of Fluid Mechanics on September 5. Kobe Japan.

29 S. Zaleski 2009 Royal academy, Sevilla, Spain.

D. Colloques avec actes

1. Pomeau Y. et Zaleski S. 1981: Wavelength selection in one dimension: application to thermoconvection in porous materials, in *Symmetries and Broken symmetries*, Ed. N. Boccara, IDSET Paris.

2. Wesfreid, J. E. et Zaleski, S. 1984, Cellular Structures in Instabilities: an introduction, in *Cellular Structures in Instabilities*, J.E. Wesfreid et S. Zaleski Ed., Springer, Berlin 1984.

3. Zaleski 1984, Wavelength selection through boundaries in 1-D cellular structures, in *Cellular Structures in Instabilities*, J.E. Wesfreid et S. Zaleski Ed., Springer, Berlin 1984.

4. Pomeau Y. and Zaleski S. 1985: the Kuramoto-Shivashinsky equation: a caricature of hydrodynamic turbulence? in *Macroscopic modelling of turbulent flow*, U Frisch Ed., Springer, Berlin 1985.

5. Zaleski S. 1988: Weakly compressible Simulations at high Reynolds numbers, in *Proceedings of the workshop on Discrete kinetic theory and foundations of hydrodynamics*, Villa Gualino, Turin, Septembre 1988.

6. Zaleski S. 1991: Lattice gases: a new approach to single and multiphase flow simulations, *Proceedings du Symposium on High Performance Computing*, p. 575-584, Montpellier, 7-9 octobre 1991, M. Durand et F. Dabaghi Ed. North Holland.

7. Zaleski S. 1992: Thermal convection at high Rayleigh number in two-dimensional sheared layers, *proceedings of the Workshop "The global geometry of turbulence"*, Rota, Espagne, Juillet 1990, p 167-179. J. Jimenez Ed., Plenum Press (Janvier 1992).

8. Appert C., Melayah A., Pot V. Rothman D. et Zaleski S. 1992: Simulating Evaporation with lattice-gases, *proceedings of the conference "Computational methods in subsurface hydrology"*, Denver 11-13 juin 1992, Springer.

9. Saleck, F.M. Bunks, C. Zaleski S. et G. Chavent 1993: combining the multigrid and gradient methods to solve the seismic inversion problem, Society of Exploration Geophysicists, Washington DC, USA, Sept. 1993

11. Keller F. X. , J. Li , A. Vallet, D. Vandromme et S. Zaleski 1994, Direct Numerical Simulation of interface breakup and atomisation, *Proceedings of the 6th international conference on liquid atomisation and spray systems*, Rouen 18-22 Juillet 1994, A. J. Yule Ed., Begell House.

12. Fullana, J. M., Rossi M. et Zaleski S. 1995: Identification de paramètres dans un problème de sillage, *12 ème Congrès Français de Mécanique*, Strasbourg 4-8 Sept. 1995.

13. Zaleski, S., Li, J, Scardovelli, R. and Zanetti G. 1996: Flows with interfaces: dealing with surface tension and reconnection, *Computation of three-dimensional complex flows, Proceedings of the IMACS-COST conference on computational fluid dynamics, Lausanne, Sept. 13-15 1995*, M. Deville, S. Gavrilakis and I.L. Rhyming Ed., NNFM, vol **53**, p. 379-386, Vieweg, Braunschweig.
14. Zaleski, S. , J. Li, R. Scardovelli et G. Zanetti 1996: Direct simulation of multiphase flows with density variations, colloque IUTAM on "Variable Density Low Speed Turbulent Flows", Marseille 8-10 Juillet 1996, L. Fulachier et F. Anselmet editors., Kluwer.
15. J. Li et S. Zaleski 1997: Direct Simulation of Spray Formation, *Proceedings of the 6th international conference on liquid atomisation and spray systems*, Séoul , Juillet 1997, p. 812-819, Begell House.
16. Zaleski S., Chen G. et C. Kharif 1998: Vorticity and energy dissipation in a breaking wave: a direct computation, *The Johns Hopkins conference in environmental fluid mechanics*, Baltimore 2-4 Avril 1998. **(Poster)**
17. Manservigi S., Popinet S., Scardovelli, S. et Zaleski S. 1998: Two front-tracking algorithms for 2D interface problems, ICMF98, Lyon, France, 8-12 Juin.
18. Gueyffier D. et Zaleski S. 1998: Full Navier-Stokes Simulations of droplet impact on thin liquid films, ICMF98, Lyon, France, 8-12 Juin.
19. Lafaurie B., Mantel T. et Zaleski S. 1998: Direct Numerical simulation of liquid jet atomization, ICMF98, Lyon, France, 8-12 Juin.
20. Popinet S. et Zaleski S. 1998: Simulation of axisymmetric free surface viscous flow around a non-spherical bubble in the sonoluminescence regime, ICMF98, Lyon, France, 8-12 Juin.
21. Lafaurie B., Mantel T. et Zaleski S. 1998: Direct Navier-Stokes simulations of the near-nozzle region, ILASS-Europe 98, Manchester, Angleterre, 6-8 Juillet.
22. Gottesdiener L., Gueyffier D., Gatignol R. et Zaleski S. 1998: Numerical simulations of large falling drops, The third Int. Conf. on Nonlinear Mechanics (ICNM III), Shanghai, Chine, 17-20 Août.
23. Hugot A. , Joseph P., Rzadkiewicz S. et Zaleski S. 1999: Finite Gravity Flow Simulation: From Triggering to Deposition, Congrès APG, Septembre 1999.
24. Popinet S. and S. Zaleski 1999, coupling of radial and translational motion in small viscous bubbles ASME / JSME JOINT Fluids engineering conference, San Francisco 18-22 July 1999.
25. Hugot, A., Joseph, P. , Zaleski, S. 2000 CATASTROPHIC GRAVITY FLOWS SIMULATION: EROSION, TRANSPORT & DEPOSIT, 31st International Geological Congress, Rio de Janeiro, August 06 - 17, 2000.
26. Renardy Y., Popinet S. Duchemin L., Renardy M., Clarke M. A. , Zaleski S. and Josserand C. 2001 Impact of a viscous drop on a superhydrophobic surface and evolution to a pyramid, AI Ch E 2001 Annual Meeting November 4 - 9. `
27. Popinet, S. , Duchemin L. and Zaleski S. 2001 Jet formation in collapsing and breaking bubbles, International Conference on Multiphase Flow (ICMF) 2001, New Orleans, USA, Juin 2001, actes publiés sur CD-ROM
28. S. Zaleski, A. Leboissetier, E. Lopes-Pages 2001 " Simulation numérique directe de l'atomisation : enseignements et perspectives ", Colloque de Synthèse du Groupe de Recherche " COMBUSTION DANS LES MOTEURS FUSEES " Cité de l'Espace - Toulouse, 26 au 28 juin 2001

29. Duchemin L. and Zaleski S. 2001 Formation du jet dans une bulle éclatant à la surface libre. Congrès Français de Mécanique , Nancy, Septembre 2001.
30. Josserand C. and S. Zaleski 2001, Impact de gouttes sur un film liquide mince, Congrès Français de Mécanique, Nancy, Septembre 2001.
- 31 A Leboissetier, S Zaleski 2001 Direct Numerical Simulation of the Atomization of a Liquid Jet - ILASS-Europe, Zurich 2-6 September 2001.
- 32 S. Zaleski and Josserand C. 2004 Droplet-Wall Interaction: Numerical Experiments and Theory International Conference on Multiphase Flow ICMF2004, May 30 - June 4, 2004.
33. F. Franco, S. Zaleski, Ph. R. Cordelier, P. Terpolilli, P. Tardy, Y. Bayon 2004 A new macroscopic nucleation model for simulation of the solution gas drive in heavy oils. Petroleum Society's 5th Canadian International Petroleum Conference (55th Annual Technical Meeting), Calgary, Alberta, Canada, June 8 – 10, 2004
34. T. Boeck, S. Zaleski 2004 Numerical Simulation of Liquid - Gas Interfaces with Applications to Atomization, Proceedings of the 21st International Congress of theoretical and Applied Mechanics (ICTAM), Warsaw (Poland), August 15-21, (2004).
35. . Josserand C. and S. Zaleski 2004, Spreading and Retraction of Impacting Drops, Proceedings of the 21st International Congress of theoretical and Applied Mechanics (ICTAM), Warsaw (Poland), August 15-21, (2004).
36. G. M. Bianchi, P. Pelloni, S. Toninel, R. Scardovelli, A. Leboissetier, S. Zaleski, A Quasi-Direct 3D Simulation of the Atomization of High-Speed Liquid Jets, Proceedings of ICES05, 2005 ASME ICE Division Spring Technical Conference, Chicago, Illinois, USA, April 5-7, 2005
37. S. Zaleski ,F. Franco M. Chraïbi and P. Tardy Analysis of a macroscopic nucleation model for simulation of the solution gas drive in heavy oils paper SPE 97795; prepared for presentation at the ITOHOS conference held in Calgary, Alberta, Canada, 1-3 November 2005.
38. Bianchi G.M., Pelloni P., Toninel S., Zaleski S., Leboissetier A., Scardovelli R., "Improving the Knowledge of High-Speed Liquid Jets Atomization by Using Quasi-Direct 3D Simulation" ICE 2005 - 7th International Conference on Engines for Automobile (Capri, Napoli (Italia), Settembre 2005) a cura di Proceedings ICE 2005 - 7th International Conference on Engines for Automobile pp. -, SAENA, NAPOLI, 2005
39. Josserand C. and S. Zaleski Full numerical simulations of droplet impact and splashing, DITICE workshop on Drop/wall interaction: Industrial applications, Experiments and Modeling Bergamo 19th May 2006 Actes sur CD ROM .
- Chraïbi M., Zaleski S. and Franco F., "A new Darcy scale model for the solution gas drive process", paper 1225 presented at the 10th European Conference on the Mathematics of Oil Recovery held in Amsterdam, The Netherlands 4-7 September 2006
- Chraïbi M., Zaleski S. and Franco F., "Modeling of nucleation fronts during depletion of gas-saturated porous media", paper presented at the 10th European Conference on the Mathematics of Oil Recovery held in Amsterdam, The Netherlands 4-7 September 2006
40. S. Zaleski and R. Scardovelli, Recent advances in VOF simulations of two-phase flow, Europe-Japan Two Phase Flow Group Meeting, Kyoto, Japan, Sept 24-28, 2006, actes sur CD-ROM.

- 41 S. Zaleski , F. Franco M. Chraibi, Bubble Geometry During Solution Gas Drive Process In Heavy Oils, CIPC 2007, Calgary, Alberta, Canada, 10-14 Juin 2007.
42. Thomas Boeck, Philip Yecko, Anne Bague and Stephane Zaleski 2007 Instability and ligament formation in two-phase mixing layers, ICMF 2007, Leipzig, Allemagne 9-13 Juillet 2007, actes sur CD-ROM.
43. Anne Bague, Stephane Zaleski et Christophe Josserand 2007 Droplet formation at the edge of a liquid sheet, ICMF 2007, Leipzig, Allemagne 9-13 Juillet 2007, actes sur CD-ROM.
44. A. Bagué, S. Popinet & S. Zaleski 2007 , Numerical simulation of atomization with adaptive jet refinement EUROMECH 493, Interface dynamics, Stability and Fragmentation, Grenoble (France)
45. Anne Bague, Stephane Zaleski et Christophe Josserand 2007 Formation de gouttelettes à l'extrémité d'une nappe, 18eme congrès français de mécanique, Grenoble, France, Sept 2007.
- 46 G.M. Bianchi, F Minelli, R. Scardovelli et S. Zaleski, 2007, 3D Large Scale Simulation of the High-Speed Liquid Jet Atomization, SAE PAPER 07PFL-162 , SAE WORLD CONGRESS & EXHIBITION, APRIL 2007,.
47. Zaleski S. 2008, Simulation Of Atomizing Jets With Oct-Tree Adaptive Mesh Refinement, , Proceedings of the 22nd International Congress of theoretical and Applied Mechanics (ICTAM), Adelaide (Australia), August 2008.
48. Anne Bagué, Daniel Fuster, Stéphane Popinet and Stéphane Zaleski 2008, Numerical Simulation Of Atomization With Adaptive Jet Refinement , ILASS 2008 Sep. 8-10, 2008, Como Lake, Italy
49. Mehdi Chraibi, Stéphane Zaleski and Fabienne Franco 2008, The slender bubble model for very slow degassing in porous media and cold production, SPE paper 117531 ; prepared for presentation at the ITOHOS conference held in Calgary, Alberta, Canada, 21-24 November 2008.
50. P.-Y. Lagrée O. Devauchelle, K.-D. Nguyen Thu-Lam, C. Josserand, É. Lajeunesse, L. Malverti, F. Métivier, and S. Zaleski (2009):"Erosion structures in laminar flumes", Powders and Grains.
51. G. Tomar, D. Fuster, S. Zaleski and S. Popinet 2009 , Multiscale simulations of primary atomization, ICLASS 2009, 11th Triennial International Annual Conference on Liquid Atomization and Spray Systems, Vail, Colorado USA, July 2009. Actes sur CD-ROM.
- 52 G. Tomar, D. Fuster, S. Zaleski and S. Popinet 2009 , Multiscale simulations of primary atomization *Multi-Scale Modelling Symposium – A CSIRO cutting edge symposium 7-8 December 2009, Melbourne, Australia.*

F Colloques sans actes ou diffusion restreinte: 1. Avec résumés publiés dans des revues.

1. S. Zaleski et J. Li 1994: Direct numerical simulation of flows with interfaces, 47 th annual meeting of the Division of Fluid Dynamics, APS, Atlanta, Georgia. *Bulletin of the American Physical Society*, Volume 39.
2. J. Li et S. Zaleski, 1995: Simulation of liquid-gas interfaces, 48 th annual meeting of the Division of Fluid Dynamics, APS, Irvine, California, *Bulletin of the American Physical Society*, Volume 40.
3. S. Zaleski et J. Li, 1996. Initial droplet formation in sheared liquid-gas flow, 49 th annual meeting of the Division of Fluid Dynamics, APS, Syracuse, New York, *Bulletin of the American Physical Society*, Volume 41.

4. S. Zaleski , M. Rossi, J. M. Fullana 1995 Parameter Identification in an array of coupled oscillating wakes", 48 th annual meeting of the Division of Fluid Dynamics, APS, Irvine, California, 1995. *Bulletin of the American Physical Society*, Volume 40.
5. S. Zaleski , M. Rossi, J. M. Fullana 1996 Parameter Identification in noisy extended systems 49 th annual meeting of the Division of Fluid Dynamics, APS, Syracuse, New York, Bulletin of the American Physical Society, Volume 41.
6. D. Gueyffier and S. Zaleski , 1998 Simulations of splashing droplets, 51st annual meeting of the Division of Fluid Dynamics, APS, Philadelphie, USA, 22-24 Novembre 1998.
7. S. Zaleski and S. Popinet, 1998 Deformed bubbles in inhomogeneous ultrasonic fields, 51 st annual meeting of the Division of Fluid Dynamics, APS, Philadelphie, USA, 22-24 Novembre 1998.
8. D. Gueyffier and S. Zaleski 1999 Simulation of a droplet splashing on a liquid film, 52nd annual meeting of the Division of Fluid Dynamics, APS, New Orleans, USA, 21-23 Novembre 1999.
9. S. Zaleski, S. Popinet Bubble collapse near a solid boundary, 2000 DFD Meeting, November 19-21, Washington, DC, USA.
- 10; C. Josserand S. Zaleski, Drop Impact on a liquid layer, 2000 DFD Meeting, November 19-21, Washington, DC, USA.
11. Josserand, C. and Zaleski S. Drop impact on a liquid layer. APS DFD meeting 2001, San Diego, Californie, USA, Novembre 2001.
12. S. Zaleski, R. Scardovelli, C. Josserand Advanced Volume of Fluid methods, applications to splashing, APS DFD meeting 2001, San Diego, Californie, USA, Novembre 2001.
13. S. Zaleski et C. Josserand Drop impact on a dry surface: characterization of the ejected jet APS DFD meeting 2003, East Rutherford, NJ, USA, Novembre 2003.
14. Stephane Zaleski, Thomas Boeck 2004 Numerical investigation of sheared liquid gas flow and atomization. APS DFD meeting 2004, Seattle, Washington, USA, 21-23 Novembre 2004.
- 15 Philip Yecko, Stephane Zaleski 2004 Optimal Disturbances in Two-Phase Mixing Layers. APS DFD meeting 2004, Seattle, Washington, USA, 21-23 Novembre 2004.
- 16 Christophe Josserand, Stéphane Zaleski 2004 Numerical insights of drop impacts on hydrophobic surfaces, APS DFD meeting 2004, Seattle, Washington, USA, 21-23 Novembre 2004.
17. Olivier Devauchelle, Christophe Josserand, Stephane Zaleski, Forced dewetting on porous media APS DFD meeting, Chicago, Illinois, USA, Novembre 2005.
- 18 Olivier Devauchelle, Christophe Josserand, Stephane Zaleski, 2006, Stability analysis of laminar flume flow coupled with sediment transport . APS DFD meeting, Tampa, Florida, USA, Novembre 2006
19. Herve Grandjean, Anne-Virginie Salsac, Gaetano Burriesci et Stephane Zaleski Motion and deformation of droplets through circular tubes, APS DFD meeting, Tampa, Florida, USA, Novembre 2006

F2. Colloques sans actes ou diffusion restreinte

1. Pomeau, Y. , Steyer A. et S. Zaleski 1990: Vaporisation des gouttes au voisinage du point critique, présenté à la conférence du 15-17 mai 1990 *Combustion dans les moteurs fusées cryotechniques*, CNES, Paris.
2. Zaleski S. 1991 *Combustion dans les moteurs fusées cryotechniques*, 17-18 octobre 1991, CNES, Paris.
3. Keller, F. X., Vallet A. , Vandromme D. et S. Zaleski 1993, Modélisation numérique de la formation des gouttes, communication au PRC Moteurs fusées, Paris Novembre 1993.
4. Zaleski S. 1993: formation de gouttes dans les écoulements à grande vitesse, Société Française des thermiciens, Journée du 1 dec. 1993.
5. Zaleski S. 1993: Three dimensional lattice gas for free surface flow, colloque CNRS-DFG de Lambrecht (Allemagne) , 3-5 Mai 1993.
6. Zaleski S. 1996: colloque du GREGOC, Chateau Gombert, Marseille.
7. Scardovelli, R. S. Zaleski et G. Zanetti 1994, A new method for the simulation of the time evolution of immiscible fluids in both two-and three dimensional configurations, SIMAI-94, (II° congresso Nazionale della Societa Italiana di Matematica Applicata e Industriale) , Anacapri, 30 mai- 3 juin 1994.
8. S. Zaleski and J. Li , Direct Simulation of interfacial flow, 19th ICTAM, Kyoto August 25-31 1996 papier KS1-08.
9. Chen G. , C. Kharif, S. Zaleski and J. Li 2D Navier-Stokes simulations of plunging breakers, 19th ICTAM, Kyoto August 25-31 1996, papier NF-1.
10. Zaleski S. Méthodes de simulations numériques des interfaces, présenté à la réunion interactions fluides-structures, Orsay, ASCI, du 3 au 7 mars 1997.
11. Zaleski S. Modélisation des interfaces et des surfaces libres, *Journées interfaces*, organisée par Grégoire Allaire (Paris 6), Rémi Abgrall (Bordeaux) et Richard Saurel (Marseille), à Bordeaux 15 Mai 1998.
12. Zaleski S. , A. Leboissetier et P. Yecko, Fifth French-German Colloquium on Research in Liquid-Rocket Propulsion, Rouen, France, Octobre 1999.
13. Zaleski S., A. Leboissetier et E. Lopez-Pages PDF Measurements in Numerical simulations of atomization, Sixth French-German Colloquium on Research in Liquid-Rocket Propulsion, Heidelberg, Allemagne 10-11 octobre 2000.
14. S. Popinet and S. Zaleski, Bubble collapse near a solid boundary: A numerical study of the influence of viscosity, IUTAM Symposium on Free Surface Flows, Birmingham, U.K. 10-14 July 2000.
15. S. Zaleski, Direct Numerical simulations of liquid jet break up
2nd Rocket Combustion Modeling Workshop, Heilbronn, Germany, March 25th to 27th 2001
16. S. Zaleski; Multiphase Turbulence, Colloque "Astromathematics" en l'honneur de E. A. Spiegel, Gubbio Italie, Mai 2001.
17. S. Zaleski, Suivi d'interfaces entre fluides: développements récents, séminaire "mécanique des fluides numérique" du CEA , 24 Janvier 2002, Saclay, France.
18. S. Zaleski, R. Scardovelli et C. Josserand, Méthodes de suivi d'interface et application à l'impact de gouttes. Journées Calcul Scientifique Limoges 27 au 28/02/02.

19 S. Zaleski Simulation d'interfaces par la méthode de Volume de Fluide 2004, Journées de Metz, 27-29 Avril 2004.

20. S. Zaleski 2005 Simulation numérique directe des écoulements complexes avec interfaces 2005, séminaire CEA-GAMNI 24-25 Janvier 2005, Institut Henri Poincaré, Paris.

21. S. Zaleski 2005 Construction, entretien et diffusion de codes libres en mécanique des fluides: l'exemple de Gerris et SURFER, journée mécanique des fluides du CINES, Montpellier, 14/01/2004.

22. S. Zaleski et M. Chraïbi 2007 Slow degassing in porous media, « Promenades dans la physique d'aujourd'hui », colloque en l'honneur du 65eme anniversaire de Yves Pomeau, ENS, Paris, 27-29 Juin 2007.

Divers colloques du GDR mécanique des fluides numérique, du GDR moteurs fusées, du PNIR.

K1 Séminaires à l'étranger sur invitation (extraits)

1990-1991

Department of Earth Atmospheric and Planetary Sciences, MIT, Cambridge, Massachusetts.

1992

Département de Mathématiques, Université Tor Vergata (Rome II)
CRS4, Cagliari, Sardaigne, Italie.

1993

Fachbereich Physik, Universität Essen, Mai 1993

An algorithm for modelling merging and fragmentation in multiphase flows, Institut für Angewandte Mathematik, Heidelberg Allemagne, 21 déc. 1993

1995

DAMTP, Cambridge, UK.

Institute of Applied Energy, Tokyo, Japon.

1996

Istituto de Fisica, UNAM, Mexico DF, Mexique.

Department of Physics, University of Texas, Austin, Texas, USA.

Bolt, Beranek et Newman, Cambridge, Massachusetts, USA.

Phillips laboratory, Hanscom Air Force Base, Massachusetts, USA.

Dept of Mathematics, MIT, Cambridge, Massachusetts, USA.

Dept of Mathematics, Virginia Polytechnical Institute, Blacksburg, Virginia, USA.

LITEC, Department of Engineering, Universidad de Zaragoza, Saragosse, Espagne

1997

Johns Hopkins University, Baltimore

Columbia University, New York.

Courant Institute of Mathematical Sciences, New York.

ETH Zürich, Suisse.

Department of Aeronautical Engineering, Kyoto University, Kyoto, Japon

1998

Bologne

1999

17 Juin 1999 Deformation and Breakup of droplets and bubbles: a numerical study, CRS4, Cagliari, Italie.

Darmstadt

2000

18 Février 2000 Séminaire au DAMTP, Cambridge, Angleterre

4 Avril 2000: Simulation of Flows with Free Surfaces: Bubble Dynamics, Cavitation and Splashing, Dept of Appl. Math, MIT, USA.

2001

6 Avril 2001, Séminaire au CRS4

15 Janvier 2001, Direct numerical simulations of liquid jet atomisation and breakup RWTH Aachen, à l'invitation du Prof. Peters.

2003

21 Février 2003 Instabilities in high speed liquid-gas mixing layers and the fluid mechanics of atomization, Mech. Eng. Worcester Polytechnic Institute, à l'invitation du Professeur Tryggvason.

2004

Bologne, département d'ingénierie à l'invitation du prof. Bianchi

2006

NIWA Wellington, New Zealand

K2 Autres séminaires (extraits)

1995

Département de Physique, ENS
LADHYX, École Polytechnique

1996

Institut de Mécanique des Fluides de Grenoble
INLN, Nice.

1997

Laboratoire d'analyse numérique, Orsay.

1998

Académie des Sciences, séance du 9 mars 1998: "La sonoluminescence à bulle unique"

1999

IRPHE, Marseille
LMASTER, Bordeaux

2002

20 Novembre 2002 La déformation et la rupture des interfaces liquide-gaz: quelques problèmes de bulles et de gouttes. Département de Physique, Ecole Normale Supérieure

17 décembre 2002 Observatoire de Nice. "Simulation numérique directe de l'atomisation"

2003

7 mars 2003 IUSTI, Marseille "Déformation, rupture et atomisation de masses liquides"

2005

30 Septembre 2005 PMMH [Simulation des écoulements avec interfaces](#)

I. Rapports de fin de contrat.

1. Appert C. , D. d'Humières, J. Olson, D.H. Rothman, and S. Zaleski 1994: Étude de la décomposition spinodale par la méthode des gaz sur réseau, rapport fait au programme CNES "microgravité".

2. S. Zaleski 1996 : Méthodes cellulaires de simulations d'interface. Rapport de fin de contrat DRET

3.-7. S. Zaleski, J. Li 1990-1996 5 Rapports de fin de contrat destiné au PRC et GDR moteurs fusées sur la simulation numérique de l'arrachage des gouttes.

8. S. Zaleski 2002 Rapport de fin de contrat destiné à la SNECMA division moteurs fusées sur la simulation numérique de l'arrachage des gouttes.

I2. Contrats en cours

1. 2005 : Contrat ANR Dynamique de l'Atomisation Assistée, avec LEGI, ONERA et IMFT.

2. 2004 : Thèse CIFRE TOTAL

L. Dissémination de l'information scientifique

Zaleski S. La Recherche, encadré

Appert C. , Pot V. et Zaleski S. 1992: Les liquides analogiques sur réseau, bulletin de la Société Française de Physique **83** Janvier 1992.

Zaleski, S. 1993: Les transitions de phase calculées, Pour la Science, n° 183, Janvier 1993.

Zaleski, S. Lagrée P.Y. , Coulouvrat F. , Samba M. et D. Gueyffier, stand et démonstration vidéo pour la Fête de la Science, Palais de la découverte, 11-13 Oct. 1996.

Ruben Scardovelli and Stephane Zaleski 2001, Direct numerical simulation, 126-128 Mc Graw-Hill Yearbook of Science & Technology 2001

M. Publication directe sur l'internet

Zaleski S. 2001 Science and Fluid Dynamics should have more open sources, <http://www.lmm.jussieu.fr/~zaleski/OpenCFD.html>

N. Publication de codes source sous licence libre LGPL

Code SURFER distribué sous licence libre, avec modules de test sur <http://www.lmm.jussieu.fr/~zaleski/codes/dropcodes.html>

O. Directions de thèses

1. Cécile Appert

Transition de phase dynamique de type liquide gaz et création d'interfaces dans un gaz sur réseau.
Déc. 1990 - 9 Avril 1993 % Encadrement: 100
Situation actuelle C.R. CNRS

2. Liliana Di Pietro

Transfert d'eau dans les milieux $\hat{}$ porosité bimodale: modélisation par la méthode des gaz sur réseaux.
Sept 90 - 3 Mai 1993 % Encadrement: 50
Nom et % des codirecteurs: François Lafolie, INRA Avignon, 50%
Situation actuelle C.R. INRA

3. Valérie Pot

Étude microscopique du transfert et du changement de phase en milieu poreux par la méthode des gaz sur réseau.
Sept 91 - 13 Juin 1994 % Encadrement: 100
Situation actuelle C.R. INRA

4. Fatimetou Mohammed-Saleck

Inversion sismique par une méthode multi-chelles.
Sept 1991- 27 mai 1994 % Encadrement: 25 %
Nom et % des codirecteurs: Carey Bunks, TOTAL CFP, 65% Guy Chavant, INRIA, 10%
Situation actuelle: salariée

5. Bruno Lafaurie

Modélisation de la convection par une méthode de gaz sur réseau et technique de suivi d'interface.
Date début: Dec 90 Date Fin: 20 Mars 1995 % Encadrement: 80
Nom et % des codirecteurs: Henri-Claude Nataf
Situation actuelle du diplômé: inconnue

6. Jie Li

Résolution numérique de l'équation de Navier-Stokes avec reconnexion d'interfaces. Méthode de suivi de volume et application à l'atomisation.
Sept 93 - 19 Novembre 1996 % Encadrement: 100
Situation actuelle: Lecturer à Cambridge (Royaume Uni)

7. Jose-Maria Fullana

Identification d'équations modèles décrivant un Écoulement de Bénard-von Karman
Sept 93- 2 Juin 1997 % Encadrement: 50
Nom et % des codirecteurs: Maurice Rossi 50%
Situation actuelle salarié chez « Laboratoires Innothéra »

8 Ruddy Blonbou

Commande des instabilités de combustion par réseaux de neurones
1996 – 1999 % Encadrement 50
Coencadré avec Alain Laverdant, ONERA
Situation actuelle Maître de conférence à l'université des Antilles-Guyanne

9. Denis Gueyffier

Étude de l'impact de gouttes sur un film liquide mince
Sept 96 – Avril 2000 % Encadrement 100
Situation actuelle postdoc à Courant Institute New York

10. Stéphane Popinet

Stabilité et formation de jets dans les bulles cavitantes
Sept 97- octobre 2000 % Encadrement 100
Situation actuelle postdoc a NIWA, Wellington, NZ

11. Hervé Carentz

Etude de la pulvérisation d'un lame liquide mince
Sept 96 – Mai 2000 % Encadrement 50
Coencadré avec JL Estivalezes
Situation actuelle : ingénieur à Turbomeca

12. Alexandre Hugot

Modélisation des écoulements gravitaires catastrophiques par une approche objet dynamique : érosion ---
transport --- dépôt.
Sept 96 – Février 2000 % Encadrement 50
Coencadré avec Philippe Joseph, IFP
Prix de thèse de l'IFP .
Situation actuelle : salarié de la société Earth Decision

13. Laurent Duchemin

Quelques problèmes fortement non-linéaires de surface libre et leur résolution numérique
Sept 99- Dec 2001 % Encadrement 33
Coencadré avec C. Josserand, C. Kharif
Situation actuelle Maître de conférence à IRPHE, Marseille.

14. . Anthony Leboissetier

Simulation Numérique directe de l'atomisation primaire d'un jet liquide à haute vitesse
Sept 99-Avril 2002 % Encadrement 100
Situation actuelle chercheur à Goddard Insitute, NASA, New York

15. Mehdi Chraibi

Ecoulements multiphasiques en milieu poreux associés au dégazage d'huiles lourdes
Oct 2004 – Janvier 2008 (est.)
Encadrement 100%
Thèse CIFRE

16. Olivier Devauchelle

Modélisation du ruissellement ; érosion, sédimentation, méandres
Oct. 2004 – Oct 2008 (est.) % Encadrement 50
Coencadré avec Christophe Josserand, LMM
Thèse ANM

17. Anne Bagué

Modélisation de l'atomisation sur maillage adaptatif hiérarchique
Oct. 2006 – 31 septembre 2009 % Encadrement 100
Thèse ANM

18 Gilou Agbaglah

Modélisation de l'atomisation d'une nappe liquide -- en cours
Oct 2008 - Oct 2011 estimé Encadrement 50% avec Christophe Josserand
Thèse MEN

19 Mernaz Reyhanian

Oct 2008 - Oct 2011 estimé Encadrement 20% avec Cédric Croizet

