

Publications

A. Merlen

International peer reviewed Journals

- 1981** – A. Dymant, A. Merlen. *Gun firing similarity for aircraft interference problems*. Journal of Aircraft. Vol. 18, n. 5.
- 1990** – A. Merlen. Theory of slightly blunted axisymmetric power law bodies small angle of attack in hypersonics flow / Théorie des faibles incidences en hypersonique pour les corps axisymétriques en loi de puissance et à émoussement faible. Comptes rendus à l'Académie des Sciences. t.310, II, p. 460 - 465. (with English version)
- 1991** – A. Merlen, A. Dymant. *Similarity and asymptotic analysis for gun firing aerodynamics*. Journal of Fluid Mechanics, 225. Avril 1991, pp. 497-528
– A. Merlen. *Stream functions in the hypersonic flow around quasi-pointed slender bodies at small angle of attack/ Fonctions de courant en écoulement hypersonique autour d'ogives quasi-pointues et à faible incidence*. Comptes rendus de l'Académie des Sciences Paris, t. 312, Série II, p. 1065-1070, Mai 1991. (with English version)
- 1992** – A. Merlen, A. Dymant. *Anisotropic blast waves and explosions in a moving gas*. European Journal of Mechanics, B/fluids, **11**, n^o 2, pp 161-198.
– A. Merlen, D. Andriamanalina. *Analytical solutions for hypersonic flow past slender power law bodies at small angle of attack*. AIAA Journal, vol 30, nb 11, pp 2683-2693 , nov 92.
- 1993** – A. Merlen, E. Fabre. *Calculation of self similar anisotropic explosions*. Shock waves. Vol.3 nb 2, p. 113-125 sept 1993.
– M. Debruyne, A. Merlen. *A critical approach of MIR : the case of Dorodnitsyn's. problem of convergence/ Une approche critique de la méthode aux relations intégrales, cas des équations de Dorodnitsyn : Problème de la convergence* CRAS. Paris t. 317, serie II, p.1269-1274.(with English version)
- 1996** – P. Pernod, A. Ahyi, A. Merlen, *Transient acoustic scattering by elastic objects : High speed visualization and large banded pressure measurements* Acustica vol 82 ; Nb 1, 247
- 1997** – D. Andriamanalina, A. Merlen. *Intense anisotropic explosion in a stratified gas./Explosion violente anisotrope dans un gaz stratifié* CRAS Paris vol 324, serie Iib, pp 307-313. (With English version)
- 1998** – C. Ayhi. Ph. Pernod, V. Latard, A. Merlen, H. Uberall *First experiment al demonstration of the pseudo-Rayleigh (A0) wave acoustically excited on water-immersed cylindrical shells*. J. of the Acoustical Society of America, vol 104, nb 5, pp 2727-2732 nov 98
- 1999** – J.N. Blanchard, Y. Brunet, A. Merlen. *Influence of a counter rotating vortex pair on the stability of a jet in across flow : an experimental study by flow visualisations* Experiments in fluids vol 26 , (1999), p.63-74
– V. Latard, A. Merlen, V. Preobazhenski, A. Ahyi. *Acoustic scattering of impulsive geometrical waves by a glass sphere in water*. Applied Physics Letters, Vol 74, numb 13, pp 1919-1921 29 march 1999.
– A. Merlen. *Generalization of the muzzle wave similarity rules*. Shock waves vol 9 numb 5, pp 341-352 oct 1999

- 2000** – L. Derbesse, Ph Pernod, V. Latard, A. Merlen, D Decultot, N Touraine, G Maze. *Acoustic scattering from complex elastic shells* Ultrasonics, vol 38, Issue 1- 8, pp.860-863, March 2000
- 2001** – S. Cieslak, S. Ben Khelil, I. Choquet, A. Merlen *Cut cell strategy for 3D blast waves numerical simulation* Shock waves, vol 10, nub. 6, pp.421-429, January 2001.
- S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod *Numerical simulation of acoustic waves phase conjugation in active media* J. of the Acoustical Society of America. vol 109, issue 1, pp 75 -83, january 2001
- V. Latard, Y. Brunet, A. Merlen *A three dimensionnal PTV technique for granular and sedimentation flows* Journal of flow visualization and image processing, Vol 8 pp. 15-30.
- C. Bounhoure, Y. Brunet, A. Merlen *Solid phase density evaluation in a two-phase flow/ Evaluation de la fraction volumique locale de phase solide dans un écoulement diphasique* Compte rendu à l'Acad. des Sciences, t. 329, série II b, p 829-834. (with English version)
- 2002** – C. Bounhoure, Y. Brunet, A. Merlen *Hydrodynamic study of sedimentation flows and avalanches* Powder technology, vol 125, issue 2-3,p 306-312 2002
- A. Merlen, V. Preobrazhenski, Ph. Pernod *Supercritical parametric phase conjugation of ultrasound. Numerical simulation of non linear and non-stationary mode* J. of the Acoustical Society of America. vol 112, issue 6, pp 2656 - 2665, december 2002
- 2003** – P.Voinovich, A.Merlen *Two-dimensional unstructured elastic model for acoustic pulse scattering at solid-liquid interfaces* Shock Waves Journal vol 12, (5) pp 421 - 429, 2003
- P.Voinovich, A.Merlen, E.Timofeev, K.Takayama *A Godunov-type finite-volume scheme for unified solid-liquid elastodynamics on arbitrary two-dimensional grids* Shock Waves Journal vol 13, (3) pp 221 - 230, 2003
- 2005** – P.Voinovich, A.Merlen *2-D numerical simulation of acoustic wave phase conjugation in active medium* J. of the Acoustical Society of America, vol 118 (6) pp. 3491-3498
- 2006** – A.Merlen, Zhang Qi *Resonant solutions in wave phase conjugation induced by a limited magneto-acoustic conjugator* J. of the Acoustical Society of America, vol 119 (6) pp. 3637 - 3648
- A.Merlen, Zhang Qi *Theory and simulation of wave phase conjugation* Ultrasonics 44 (2006) pp. e1475 - e1478
- A. Merlen, Zhang Qi *Paraxial theory of supercritical wave phase conjugation in a realistic conjugator* Appl. Phys. Let. 89, art 194102
- O. Ducloux, A. Talbi, Y. Deblock, L. Gimeno, N. Tiercelin, P. Pernod, V. Preobrazhensky, A. Merlen. *Magnetically actuated microvalve for active flow control* Journal of Physics : Conference Series 34 (1), pp. 631-636
- 2007** – Y. Deblock, O. Ducloux, L. Derbesse, A. Merlen, and P. Pernod *A high speed single CCD Cranz-Schardin camera.* - Review of Scientific Instruments 78, art 035111
- Y.Brunet A.Merlen *A statistical approach of sedimentation flows* Powder technology 175 pp. 122 - 132
- F. Simon, S. Deck, P. Guillen, R. Caysac, A. Merlen *Zonal-detached eddy*

- simulation of projectiles in subsonic and transonic regime* AIAA J. Vol. 45, No. 7, pp. 1606 - 1619
- F. Zoueshtiagh, A. Merlen *On the effect of a vertically-flowing water jet underneath a granular bed* Phys. Rev. E. 75 056313
 - O. Ducloux, A. Talbi, L. Gimeno, R. Viard, P. Pernod, V. Preobrazhensky, A. Merlen *Self-Oscillation mode due to fluid-structure interaction in a Micro-mechanical Valve* Appl. Phys. Lett. 91 (3) art 024101
 - F. Simon, S. Deck, P. Guillen, P. Sagaut, A. Merlen *Numerical simulation of the compressible mixing layer past an axisymmetric trailing edge* J. Fluid Mech, vol. 591, pp. 215-253
 - A. Merlen, F. Zoueshtiagh, P. J. Thomas, V. Thomy *Micrometric ripples in a capillary tube, the effect of micro gravity* Micro gravity Sciences and technology. vol XIX/3-4, pp. 60 - 61
 - M. Pamiès, E. Garnier, A. Merlen, P. Sagaut *Response of a spatially developing turbulent boundary layer to active control strategies in the framework of opposition control* Phys. Fluids, 19, 108102
- 2008** – F. Zoueshtiagh, P. J. Thomas, V. Thomy, A. Merlen *Micrometric Granular Ripple Patterns in a Capillary Tube* Phys. Rev. Lett. Physical Review Letters 100, 054501 (2008) **selected for the February 18, 2008 issue of Virtual Journal of Nanoscale Science & Technology.**
- A. Merlen, Zhang Qi *Supercritical magneto-acoustic wave phase conjugation in spherical symmetry* Acta Acustica united with acustica, Vol 94, nb 1, pp 72-78, January 2008.
- 2009** – F. Simon, S. Deck, P. Guillen, A. Merlen, R. Cayzac, *Numerical simulation of magnus force control for projectiles configurations*, Computers & Fluids 38 (2009) 965 - 968
- A. Merlen, Q. Zhang, P. Voinovich, E. Timofeev *Duality of WPC supercritical solution* Wave Motion 46 (2009) 255 - 268.
 - P. Pernod, V. Preobrazhensky, A. Merlen, O. Ducloux, A. Talbi, L. Gimeno, R. Viard, N. Tiercelin *MEMS Magneto-Mechanical Microvalves (MMMS) for Aerodynamic Active Flow Control*, Journal of Magnetism and Magnetic Materials doi :10.1016/j. jmmm.2009.04.086 322(2010)1642 ?1646
 - O. Ducloux, A. Talbi, L. Gimeno, Y. Deblock, R. Viard, P. Pernod, V. Preobrazhensky, A. Merlen *A magnetically actuated, high flow rate MEMS micro-valve for active flow control*. Journal of Micromechanics and Microengineering (IOP), 19 (2009) 115031 (7pp) doi :10.1088/0960-1317/19/11/115031
 - A. Merlen, P. Brunet *Impact of drops on non-wetting biomimetic surfaces* Journal of Bionic Engineering 6 (2009) 264-269
 - P. Brunet, F. Lapierre, F. Zoueshtiagh, V. Thomy, and A. Merlen *To grate a liquid into tiny droplets by its impact on a hydrophobic micro-grid* Applied Physic Letter 95, 254102, 2009, doi :10.1063/1.3275709
- 2010** – Olivier Ducloux, Elisabeth Galopin, Farzam Zoueshtiagh, Alain Merlen, and Vincent Thomy *Enhancement of biosensing performances in a droplet-based Bioreactor by in-situ micro-streaming*. Biomicrofluidics 4, 1-1 2010, **selected for Virtual Journal of Biological Physics Research, Feb. 2010**
- L Gimeno, A Talbi , R Viard , A Merlen , P Pernod and V Preobrazhensky *Synthetic jets based on Micro Magnetical Mechanical Systems for aerodynamic flow control*. Journal of Micromechanics and Microengineering (IOP) 20

(2010) 075004.

- 2011** – P. Pernod, A. Merlen, A. Talbi, V. Preobrazhensky, R. Viard, L. Gimeno and O. Ducloux *IEMN/LEMAR Magneto-Mechanical Microjets and micro-hotwires and Aerodynamic Active Flow Control* International Journal of Aeronautics. Vol. 1, Nos. 3/4, 2011, 243-261.
- Mathieu Pamiès, Eric Garnier, Alain Merlen, Pierre Sagaut *Opposition control with arrayed actuators in the near-wall region of a spatially-developing turbulent boundary layer* Int. J. Heat and Fluid Flows. 32, (2011), 621-630
 - Alain Merlen and Christophe Frankiewicz *Cylinder rolling on a wall at low Reynolds numbers* J. Fluid Mech. (2011), vol. 685, pp. 461 - 494. Cambridge University Press 2011 doi :10.1017/jfm.2011.331
- 2011, en soumission** – A. Merlen and P. Voinovich *On the sensitivity of conjugate acoustic wave at parametric resonance conditions to small wavelength variations* Int. J. Sound and Vibration.
- Christophe Frankiewicz, Jeremy Streque, Abdelkrim Talbi, Philippe Pernod, Alain Merlen and Farzam Zoueshtiagh *Plasma etching of Silastic S elastomer for microfluidics* Journal of Micromechanics and Microengineering

Patents

- 1998-1999** Ph. Pernod, A. Merlen, C. Ayhi, Ch. Bègue *Procédé d'acquisition d'images ultra-rapide à base d'un capteur matriciel à semi-conducteurs, type CCD, et dispositif pour la mise en oeuvre de ce procédé.* French patent Num 9800518 13/January/98
- 2009** A. Merlen, P. Pernod, A. Talbi, L. Gimeno, V. Preobrazhenski, *microactionneur intégré magnéto-mécanique à jet synthétique : contrôleur d'écoulements* n° 0954692
- 2010** L. Gimeno, A. Talbi, P. Pernod, A. Merlen, R Viard, V. Mortet, A. Soltani, V. Preobrazhenskii, *Capteur à fil chaud de taille submillimétrique et procédé de réalisation associé* F0644CAS271 French patent
- 2011** R. Viard, A. Talbi, P. Pernod, A. Merlen, V. Preobrazhensky *Capteur miniaturisé à élément chauffant et procédé de fabrication associé* French patent N°11 56409

Awards

- Trophy 2006 of "Association Française de Mécanique".
- Innovation award MBDA 2009 (One star)

Congress Awards

- Best Poster for O. Ducloux, Y. Deblock, A. Talbi, N. Tiercelin, P. Pernod, V. Preobrazhenski, A. Merlen *Magnetically actuated microvalve for active air flow control.* IMEMS Singapore 2006
- Best poster award IEEE Ultrasonic Symposium (Rotterdam) 2005

Chapters of books

- 1995** – A. Merlen *From the analytical theory to hypersonic aircraft design.* "Asymptotic modelling in fluid dynamics" Edited by : P.A. Bois, E. Deriat, R. Gatiagnol, A. Rigolot , Lecture Notes in Physics (p. 221-228).

- 2002** – S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod. *Acoustic waves phase conjugation in active media. Numerical simulations* "Fluid Mechanics and its applications" : Diffraction and scattering in fluid mechanics and elasticity, Kluwer Academic press, pp 133-140)
- 2003** – A. Merlen, P. Voinovich, V. Preobrazhenski, Ph. Pernod *Finite Volume Method for Wave phase conjugation in active media* Mathematical and Numerical Aspects of wave Propagation - Springer
- 2006** – O. Ducloux, Y. Deblock, A. Talbi, P. Pernod, V. Preobrazhenski, A. Merlen. *Magnetically actuated microvalves for active flow control* in Flow control and MEMS, J. Morrison et al. (Eds.), Springer, Dordrecht, 2008
- P. Pernod, V. Preobrazhenski, A. Merlen, O. Ducloux, A. Talbi, L. Gimeno, N. Tiercelin, *MEMS for flow control : technological facilities and MMMS alternatives*, in Flow control and MEMS, J. Morrison et al. (Eds.), Springer, Dordrecht, 2008
- E. Garnier, M. Pruvost, O. Ducloux, A. Talbi, L. Gimeno, P. Pernod, A. Merlen, V. Preobrazhenski *ONERA/IEMN contribution within the ADVACT program : Actuators evaluation*, in Flow Control and MEMS, J. Morrison et al. (Eds.), Springer, Dordrecht, 2008.
- 2009** – P. Pernod, A. Merlen, A. Talbi, R. Viard, L. Gimeno, V. Preobrazhenski. *Les solutions de microjets MEMS/MMMS de l'IEMN/LEMAC à l'épreuve des essais en soufflerie. Des nouveaux enjeux fondamentaux* "Contrôle des décollements" : Cépaduès éditeur press, pp 133-140)
- L. Gimeno, A. Talbi, R. Viard, V. Preobrazhenski, A. Merlen, P. Pernod. *Microjets synthétiques MMMS pour les contrôles d'écoulements aérodynamiques* "Contrôle des décollements" : A. Kourta (Ed), Editions Cépaduès, ISBN 978-2-8542-8916-9, pp 149-158

National Journals

- 1982** – A. Dymont, A. Merlen. *Écoulement consécutif à une explosion violente ponctuelle dans un gaz animé initialement d'un mouvement uniforme*. Comptes rendus à l'académie des sciences t. 294, II, pp. 493-497.
- 1994** – P. Pernod, A. Merlen, A. Kemmou, A. Ahyi, *Etude par visualisations ultra rapides et mesures de pression d'une source impulsionnelle large bande non-directive* Journal de Physique 4, vol 4; nb 5//V2, p. C5-729
- 2002** – A. Merlen *Explosions et ondes de choc violentes* Revue Scientifique et technique de la Défense vol 56. p 132-138.
- 2005** – A. Merlen *Le Congrès Français de Mécanique : De l'AUM à l'AFM* Editorial : Mécanique et Industries 6 (3), pp. 243-244

Invited Conferences in International congresses

- 1994** – A. Merlen *From the analytical theory to hypersonic aircraft design*. Modélisation asymptotique en mécanique des fluides. Paris 20 au 22 avril 1994
- 2004** – A. Merlen, P. Voinovich *Flow structure in strong anisotropic blast waves* Symposium on Interdisciplinary Shock Wave Research Matsushima, Japan March 22-24, 2004
- 2006** – P. Pernod, A. Merlen, V. Preobrazhenski, O. Ducloux, A. Talbi, L. Gimeno, Y. Deblock, N. Tiercelin, *Magnetically actuated microvalves for active flow*

*contro*UTAM Symposium on flow control and MEMS, Imperial college, London 19-22 Septembre 2006

- 2007** – P. Pernod, V. Preobrazhenski, A. Merlen, O. Ducloux, A. Talbi, L. Gimeno, R. Viard, N. Tiercelin, "MMMS for active flow control", AAAF Symposium, Nice, Mars 2007
- 2008** – A. Merlen, F. Zoueshtiagh, V. Thomy (2008) *Flow regimes of micrometric ripples in a capillary channel in micro gravity* 37th COSPAR Scientific Assembly, Montreal, Canada July 13-20th.
- 2009** – A. Merlen, *Microsystems for flow control and transfer; a challenge for CFD* Plenary lecture Int. Cong on Computational heat and mass transfer 2009, Guangzhou May 18-21th.
- 2010** – A. Merlen, *Microfluidics and MEMS for fluidic applications* Fifth International Topical Team Workshop on two-phase systems for ground and space applications, , Kyoto, Japan, September 25-29, 2010.

International congress proceedings

- 1990** – A. Merlen, A. Dymont. *Similarity for transitional ballistics*. Proceedings of the 12th International symposium on Ballistics. Vol.1. p. 153 - 162, San Antonio, Texas, USA. 29. Oct au 1.Nov. 1990.
- 1993** – A. Merlen, A. Dymont. *Similarity and patterns for non instantaneous explosions*. 19 th International Symposium on ShockWaves. Université de Provence, Marseille, July 26-30 1993. Actes parus en 95 dans : Shock waves Marseille, vol 4, shock structure and Kinematics, Blast waves and detonations. Part. 5 pp 393-398. R. Brun ; L. Z. Dumitrescu editors Springer
- 1994** – A. Merlen *From the analytical theory to hypersonic aircraft design*. Sur invitation au Colloque de l'université de Paris VI : Modélisation asymptotique en mécanique des fluides. Paris 20 au 22 avril 1994 Actes publiés par Springer Verlag sous le titre : "Asymptotic modelling in fluid dynamics" Edited by : P.A. Bois, E. Deriat, R. Gagniol, A. Rigolot paru en 95 dans, Lecture Notes in Physics (p. 221-228).
- 1995** – A. Merlen, P. Pernod, A. Ahyi, A. Kemmou, *Shock diffraction by an elastic sphere in water*. 20 th International Symposium on Shock Waves. (Pasadena (Cal.)) (July 95) Paru en juin 96 dans "Shock waves proceedings of the 20th International Symposium on shock waves. B. Sturtevant, J. Shepherd and H. Hornung (editors)World Scientific Publishing C0, Singapore."
- A. Merlen, E. Fabre, S. Cieslak, *Analytical waverider configurations*. 20 th International Symposium on Shock Waves. (Pasadena (Cal.)) (July 95)Paru en juin 96 dans "Shock waves proceedings of the 20th International Symposium on shock waves. B. Sturtevant, J. Shepherd and H. Hornung (editors) World Scientific Publishing C0, Singapore."
- 1997** – L. Descamps, A. Merlen, *Point source anisotropic explosions*. 21 th International Symposium on Shock Waves. (Great Keppel, Queensland, Australia) (July 97) Actes sur CD(ISBN 0-909683-16-6), AFP Houwing editor in Chief.
- P. Pernod, A. Ahyi, O. Gatti, A. Merlen *Acoustic scattering of Dirac pulse from complex elastic shells*. World Congres on Ultrasonics 97, Yokohama, Proceedings p 102.

- 1998** – X. Claude, A. Merlen, B. They, O. Gatti. Abrasive water jet velocity measurements. 14th International Conference on Jetting Technology. Professional engineering Publishing, BHR group Jetting Technology. p 235-251
- 1999** – V. Latard, A. Merlen, P. Pernod, A. Ahyi. *Ultra high speed impulsive scattering visualisation technique*, Proceedings of Euromech colloquium on vibro acoustics and flow structure interactions. Cargèse 19-23 April 99 pp.141-146, publication LMA nb 151 (june 1999)
- L. Derbesse, Ph Pernod, V. Latard, A. Merlen, D Decultot, N Touraine, G Maze. *Acoustic scattering from complex elastic shells* Ultrasonics international 99 and 1999 World congress on ultrasonics. Copenhagen 29 June - 1 July 99, Ultrasonics 1431 Elsevier publisher
 - S. Cieslak, S. Ben Khelil, I. Choquet, A. Merlen. Cut cells Strategy for 3D blast waves problems. 22th International Symposium On Shock Waves, ISSW22. London imperial college 18-23 July 99
 - L. Descamps, A. Merlen. *Analytical solutions for self similar anisotropic explosions* 22th International Symposium On Shock Waves, ISSW22 London Imperial college. 18-23 July 99
 - V. Latard, A. Merlen, P. Pernod, A. Ahyi. *Visualisation of the A0 Lamb Wave and A Scholte-Stoneley Wave interaction*. Acoustic scattering, ASME Design Engineering Technical Conference 99(CD : ASME DETC99/VIB-8094) Las Vegas 12-16 sept 99
 - G. Maze, N. Touraine, A. Baillard, D. Decultot, V. Latard, L. Derbesse, Ph. Pernod, A. Merlen. *A0 wave and A wave in cylindrical shell immersed in water : influence on the acoustic scattering* Acoustic scattering, ASME Design Engineering Technical Conference 99, (cd ASME DETC99/VIB-8090) Las Vegas. 12-16 Sept 99.
- 2000** – S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod. *Acoustic waves phase conjugation in active media, a new numerical approach*. 23th Scandinavian congress on physical acoustics, Ustaoset Norway, 30/01-2/02/2000
- S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod. *A numerical approach of acoustic waves phase conjugation in active media*. Waves2000, Fifth International Conference on Mathematical and Numerical Aspects of Wave Propagation, Santiago de compostella, (SIAM-INRIA) 10-14 July 2000.
 - L. Derbesse, Ph. Pernod, A. Merlen, A. Guillet. P. Voinovich. *Quantitative visualisation and numerical simulation of acoustic scattering phenomena in an elastic plate of linearly varying thickness*. Fifth European Congress on Underwater Acoustics (ECUA2000). Lyon. 10-12 July 2000
 - S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod. *Acoustic waves phase conjugation in active media. Numerical simulations* IUTAM Symposium 2000/10 on Diffraction and Scattering in Fluid Mechanics and Elasticity, University of Manchester, 16th July - 20th July, 2000. (Dans "Fluid Mechanics and its applications" : Diffraction and scattering in fluid mechanics and elasticity, Kluwer Academic press, pp 133-140 publié en 2002)
 - L. Derbesse, V. Latard, P. Pernod, A. Merlen. *Quantitative high-speed schlieren visualisations applied to acoustic scattering phenomena*. 9th International symposium on flow visualisation Edimburgh, 22-25 August 2000, Editor Carlomagno - Grant
 - A. Merlen, C. Bègue, L. Derbesse, Ph. Pernod, C. Ahyi *The Michrocam*

- concept of Ultra high speed camera* 24th Int. Congress on High Speed Photography and photonics. (24 ICHSPP2000), 24-29 Sept 2000, Sendai. (Actes publiés par Spie - the international Society for Optical Engineering. Vol 4183 pp. 145-152)
- S. Ben Khelil, A. Merlen, V. Preobrazhenski, Ph. Pernod. *Nonlinear mode of parametric waves phase conjugation of ultrasound : numerical approach*. 2000 IEEE International Ultrasonics symposium and short courses October 22-25 San Juan, Puerto-Rico. (Actes publiés en oct 2001 par IEEE)
- 2001** – C. Bounhoure, Y. Brunet, A. Merlen *Measurement of the local volume fraction of the solid phase in a diphasique flow*. International congress on multiphase flows, New Orleans, May 2001.
- P. Voinovich, A. Merlen, E. Timofeev, K. Takayama *Numerical simulation of wave scattering at shock loaded metallic plates and shells in water* 23th International Symposium on shock waves (Fort Worth Tx USA)22-27 July 2001.
 - K. Takayama, P. Voinovich, E. Timofeev, A. Merlen, K. Kaiho *Underwater shock and ground seismic waves due to a catatrophic asteroid impact* 23th International Symposium on shock waves (Fort Worth Tx USA)22-27 July 2001.
 - A. Merlen, V.L.Preobrazhensky, P. Pernod *Numerical simulation of nonlinear mode in supercritical parametric phase conjugation*. International Congress of Acoustics, 3-7 September 2001, Roma.
 - L.P. Derbesse, P. Voinovich, A. Merlen, P. Pernod *2-D unstructured numerical simulation for acoustic pulse scattering at water-immersed steel plate. Lamb and Scholte-Stonneley waves investigation*. International Congress of Acoustics, 3-7 September 2001, Roma.
 - L. Derbesse , P. Pernod , P. Voinovich , A. Merlen *2-D Unstructured Numerical Simulation of acoustic lamb and scholte-stonneley waves propagation. Influence of defects in plates*. IEEE international symposium Atlanta USA Oct. 2001
 - Merlen, A, Begue, C, Derbesse, L, et al. em *The Michrocam concept of CCD Cranz Schardin high-speed camera* P SOC PHOTO-OPT INS 4183 : 145-152 2001
- 2002** – A.Merlen, V. Preobrazhenski, Ph. Pernod *Numerical Simulation for Wave phase conjugation* International Symposium on Non Linear Acoustics - Moscou, Aout 2002
- P. Voinovich, A. Merlen, E. Timofeev, K. Takayama *Numerical simulation of impulsive elastic waves in liquids and solids using unstructured grid methods* International Conference "Shock Waves in Condensed Matter", High Pressure Center Institute of Chemical Physics St.Petersburg, Russia, 1-6 September, 2002
- 2003** – A.Merlen, P. Voinovich, V. Preobrazhenski, Ph. Pernod *Finite Volume Method for Wave phase conjugation in active media* Waves 2003 - Jyvaskylä, Finland, 30 June - 4 July 2003 Published in Mathematical and Numerical Aspects of wave Propagation - Springer
- 2004** – A. Merlen, P. Voinovich Symposium on Interdisciplinary Shock Wave Research *Flow structure in strong anisotropic blast waves* Matsushima, Japan March 22-24, 2004 (Invited conference) Proceeding

- C. Bounhoure, Y. Brunet, A. Merlen *Statistical physics applied to non maxwellian behaviors in sedimentation* 5th International Conference on Multiphase Flow (ICMF 04) Yokohama, Japan, May 30 - June 4, 2004 Proceeding
 - A. Merlen, P. Voinovich *Numerical experiments for wave phase conjugation induced by vibrations* Flow Induced Vibration 2004 (FIV2004) Ecole Polytechnique, Orsay, July 5 - 9, 2004 Proceeding I pp 75-80
 - P. Voinovich, A. Merlen, V. Preobrazhensky, P. Pernod, *2D numerical simulation of acoustic wave phase conjugation in active medium*, 2004 IEEE International Ultrasonics, Ferroelectrics, and Frequency Control 50th Anniversary Joint Conference, Proceedings - IEEE Ultrasonics Symposium 3, pp. 1872-1875, Montréal, Canada, 24-27 Aout 2004.
 - Bounhoure C., Brunet Y., Merlen A. *Non-maxwellian sedimentation : statistical physics approach* International Symposium on Two-Phase Flow Modelling and Experimentation. (Pise, Italy), 2004
- 2005**
- A. Merlen, Zhang Qi *Theory of acoustic wave phase conjugation in active media* 7th International Conference on Mathematical and Numerical Aspects of Waves - Waves2005 - Brown Univ. Providence, RI-USA 20-24 Juin 2005
 - A. Merlen, Zhang Qi *Theory of acoustic wave phase conjugation* World Congress on Ultrasonics/ Ultrasoncis international - Beijing. China, 28 August-1 sept 2005.
 - A. Merlen, Zhang Qi *Theory of one-dimensional acoustic wave phase conjugation* Proceedings - IEEE Ultrasonics Symposium 4, art. no. 1603294, pp. 2097-2099, Rotterdam Netherland, Sept 2005.
 - O. Ducloux, N Tiercelin, Y. Deblock, P. Pernod, V. Preobrazhensky, A. Merlen /em Cantilever resonance induced in situ by magnetostriction for active flow control Source Proceedings - IEEE Ultrasonics Symposium 4, art. no. 1603343, pp. 2297-2300, Rotterdam Netherland, Sept 2005.
- 2006**
- A. Merlen *Hydrodynamical Theoretical Solutions for Peristaltic Microchannels*. Proceedings of the 4th International Conference on Nanochannels, Microchannels and Minichannels, ICNMM2006 2006 B, pp. 733-740 Limerick-Ireland (19-21 June 2006)
 - O. Ducloux, Y. Deblock, A. Talbi, N. Tiercelin, P. Pernod, V. Preobrazhenski, A. Merlen *Magnetically actuated microvalve for active air flow control*. Poster IMEMS Singapour prix meilleur poster
 - O. Ducloux, Y. Deblock, A. Talbi, N. Tiercelin, P. Pernod, V. Preobrazhenski, A. Merlen *Magnetically actuated microvalve for active air flow control*. Actuator- Bremen
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