

Rémi Abgrall

Publication list

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1 Refereed Publications in journals

1. R. Abgrall, High order schemes for hyperbolic problems using globally continuous approximation and avoiding mass matrices., *Journal of Scientific Computing*, 73(2-3), pp 461-494, 2017
2. R. Abgrall, Q. Viville, H. Beaugendre and C. Dobrzynski, Construction of a p-adaptive continuous residual distribution scheme. *Journal of Scientific Computing*, 72(3), pp 1232-1268, 2017
3. R. Abgrall and S. Tokareva, Staggered grid residual distribution scheme for Lagrangian hydrodynamics, *SIAM J. Scientific Computing*, 39(5), A2317-A2344, 2017
4. R. Abgrall, About non linear stabilization for scalar hyperbolic problems. Recent progress and modern challenges in applied mathematics, modeling and computational science, 89-116, *Fields Inst. Commun.*, 79, Springer, New York, 2017. 65N30 (65N12)
5. B. Schmidtman, R. Abgrall and M. Torrilhon, On third-order limiter functions for finite volume methods., *Bull. Braz. Math. Soc.*, 47(2), 753-764, 2016
6. K. Tang, P.M. Congedo and R. Abgrall, Adaptive surrogate modeling by ANOVA and sparse polynomial dimensional decomposition for global sensitivity analysis in fluid simulation. *J. Comput. Phys*, 314, pp 557-589, 2016
7. Geraci, Gianluca, Congedo, Pietro Marco; Abgrall, Rémi; Iaccarino, Gianluca A novel weakly-intrusive non-linear multiresolution framework for uncertainty quantification in hyperbolic partial differential equations. *J. Sci. Comput.* 66, No. 1, 358-405 (2016).

8. Pietro Marco Congedo, Gianluca Geraci, Gianluca Iaccarino, Rémi Abgrall, High-order statistics in global sensitivity analysis: decomposition and model reduction *Computer Methods in Applied Mechanics and Engineering*, Elsevier, accepted, 2016
9. R. Abgrall, D. Amsallem, R. Crisonovan, Robust Model Reduction by L1-norm Minimization and Approximation via Dictionaries: Application to Nonlinear Hyperbolic Problems, *Advanced Modeling and Simulation in Engineering Sciences*, *Advanced Modeling and Simulation in Engineering Sciences*, 3(1), 1-16 DOI 10.1186/s40323-015-0055-3
10. Gianluca Geraci, Pietro Marco Congedo, Rémi Abgrall, Gianluca Iaccarino, A novel weakly-intrusive non-linear multiresolution framework for uncertainty quantification in hyperbolic partial differential equations *Journal of Scientific Computing*, January 2016, Volume 66, Issue 1, pp 358-405
11. Maria Giovanna Rodio, Rémi Abgrall, An innovative phase transition modelling for reproducing cavitation through a five-equation model and theoretical generalization to six and seven-equation models *International Journal of Heat and Mass Transfer*, Volume 89, October 2015, Pages 1386-1401
12. Pietro Marco Congedo, Rémi Abgrall, Maria Giovanna Rodio, Gianluca Geraci, Stochastic Discrete Equation Method (sDEM) for two-phase flows *Journal of Computational Physics*, Volume 299, 15 October 2015, Pages 281-306
13. Abgrall, Rémi and Congedo, Pietro Marco and Geraci, Gianluca and Iaccarino, Gianluca, An adaptive multiresolution semi-intrusive for UQ in compressible fluid problems, *International Journal for Numerical Methods in Fluids*, Volume 78, Issue 10, 10 August 2015, Pages: 595-637
14. J. Dobes, M. Ricchiuto, R. Abgrall, H. Deconinck, On hybrid residual distribution-Galerkin discretisations for steady and time dependant viscous laminar flows, *Computers Methods in Applied Mechanics and Engineering*, vol 283, pages 1336-1356, 2015
15. L. Arpaia, M. Ricchiuto and R. Abgrall, An ALE formulation for Explicit Runge-Kutta Residual distribution scheme, *Journal of Scientific Computing*, volume 63(2), pages 502-547, 2015
16. Kunkun Tang, Pietro Marco Congedo, Rémi Abgrall, Sensitivity analysis using anchored ANOVA expansion and high order moments computation *International Journal for Numerical Methods in Engineering*, 2015, volume 102(9), page 1554-1584.
17. R. Abgrall and D. de Santis, Linear and non-linear high order accurate residual distribution schemes for the discretization of the steady compressible Navier-Stokes equations, *Journal of Computational Physics*, 2015, vol 283, pp 329-359.
18. R. Abgrall, Pietro Marco Congedo, Dante De Santis, Nassim Razaaly, A non-linear residual distribution scheme for real-gas computations *Computers and Fluids*, 2014, vol 91, pp 164-181
19. Maria Giovanna Rodio, Pietro Marco Congedo, Rémi Abgrall, Two-phase flow numerical simulation with real-gas effects and occurrence of rarefaction shock waves *European Journal of Mechanics - B/Fluids*, 2014, vol 45, pp 20-35
20. G.I. Jennings, D. Prigge, S. Carney, S. Karni, J.B. Rauch, R. Abgrall, Water wave propagation in unbounded domains. Part II: Numerical methods for fractional PDEs *Journal of Computational Physics*, Volume 275, 15 October 2014, Pages 443-458
21. François Vilar, Pierre-Henri Maire, Rémi Abgrall, A discontinuous Galerkin discretization for solving the two-dimensional gas dynamics equations written under total Lagrangian formulation on general unstructured grids *Journal of Computational Physics*, Volume 276, 1 November 2014, Pages 188-234

22. D.I. Ilin, N. Saintier, J.M. Olive, R. Abgrall, I. Aubert, Simulation of hydrogen diffusion affected by stress-strain heterogeneity in polycrystalline stainless steel, *International Journal on Hydrogen Energy*, vol 39, pp 2418-2422, 2014.
23. R. Abgrall, C. Dobrzynski, A. Froehly, A method for computing curved meshes via the linear elasticity analogy, *Int. J. Numer. Meth in Fluids*, 2014, vol 76(4), pp 246-266..
24. J. Tryoen, P. Congedo, R. Abgrall, T. Magin, N. Villedieu, Sensitivity analysis and characterization of the uncertain input data for the EXPERT vehicle, *AIAA Journal*, 2014, Vol.52: 2190-2197, doi:10.2514/1.J052831
25. R. Abgrall, M. Ricchiuto, D de Santis, High-Order Preserving Residual Distribution Schemes for Advection-Diffusion Scalar Problems on Arbitrary Grids, *SIAM J. Scientific Computing*, 2014, vol 36(3), pp A955-A983
26. R. Abgrall, P.M. Congedo, G. Geraci, G. Iaccarino, An adaptive multiresolution semi-intrusive scheme for UQ in compressible fluid problems. *IJNMF*, Volume 78, Issue 10, 10 August 2015, Pages: 595-637
27. R. Abgrall and M.G. Rodio, Discrete Equation Method (DEM) for the simulation of viscous, compressible, two-phase flows *Computers & Fluids*, Volume 91, 5 March 2014, Pages 164-181
28. Rémi Abgrall and Harish Kumar Numerical approximation of a compressible multiphase system. *Commun. Comput. Phys.*, 15(5), 2014, pp. 1237-1265.
29. R. Abgrall and H. Kumar, Robust finite volume schemes for two-fluid plasma equations, *Journal of Scientific Computing*, September 2014, Volume 60, Issue 3, pp 584-611
30. P. M. Congedo, G. Geraci, R. Abgrall, V. Pediroda, and L. Parussini, TSI metamodels-based multi-objective robust optimization. *Engineering Computations*, Vol. 30(8), 2013
31. R. Abgrall, H. Beaugendre and C. Dobrzynski, An immersed boundary method using unstructured anisotropic mesh adaptation combined with level-sets and penalization techniques, *Journal of Computational Physics*, volume 257 part A, pages 83-101, 2014.
32. D.S. Balsara, M. Dumbser and R. Abgrall, Multidimensional HLLC Riemann solver for unstructured meshes with applications to Euler and MHD flows, *Journal of Computational Physics*, volume 261, pages 172-208, 2014.
33. R. Abgrall, P.M. Congedo and G. Geraci, A One-Time Truncate and Encode Multiresolution Stochastic Framework, *Journal of Computational Physics*, Volume 257, Part A, 15 January 2014, Pages 19-56
34. Z.J. Wang, K. Fidkowski, R. Abgrall, F. Bassi, D. Caraeni, A. Cary, H. Deconinck, R. Hartmann, K. Hillewaert, H.T. Huynh, N. Kroll, G. May, P.-O. Persson, B. van Leer, M. Visbal, High-Order CFD Methods: Current Status and Perspective, *Int. J. Numer. Meth in Fluids.*, Volume 72(8), pp 811-911, 2013.
35. P.H. Maire, R. Abgrall, J. Breil, R. Loubère and B. Rebourecet. Cell-centered Lagrangian scheme for elastic-plastic flows on two-dimensional unstructured grids., *J. Comput. Phys.*, Volume 235, 15 February 2013, Pages 626-665
36. R. Abgrall and A. Krust, An adaptive enrichment algorithm for advection-dominated problems, *Int. J. Numer. Meth. in Fluids*, Volume 72, Issue 3, 30 May 2013, Pages: 359-374
37. R. Abgrall and P.M. Congedo, A semi-intrusive deterministic approach to uncertainty quantifications in non-linear fluid flow problems, *Journal of Computational Physics*, Volume 235, 15 February 2013, Pages 828-845.

38. R. Abgrall, A. Krust, M. Ricchiuto, D. de Santis, Numerical approximation of parabolic problems by means of residual distribution schemes, *International Journal on numerical Methods in Fluids*, Volume 71, Issue 9, 30 March 2013, Pages: 1191-1206
39. Rémi Abgrall, A review of Residual distribution schemes for hyperbolic and parabolic problems : the July 2010 state of the art., *Commun. Comput. Phys.*, 11 (2012), pp. 1043-1080.
40. R. Abgrall, G. Baurin, P. Jacq et M. Ricchiuto, Some examples of high order simulations parallel of inviscid flows on unstructured and hybrid meshes by residual distribution schemes, *Computers & Fluids*, Volume 61, 30 May 2012, Pages 6-13, doi:10.1016/j.compfluid.2011.05.014
41. R. Abgrall, A. Larat, M. Ricchiuto, Construction of very high order residual distribution schemes for steady inviscid flow problems on hybrid meshes, *Journal of Computational Physics*, Volume 230, Issue 11, 20 May 2011, Pages 4103-4136, doi: 10:1016/j.jcp.2010.07.035
42. F. Vilar, P.H. Maire et R. Abgrall, Cell-centered discontinuous Galerkin Discretisation for two dimensional scalar conservation laws and for one-dimensional Lagrange hydrodynamics, *Computers & Fluids*, Volume 46, Issue 1, July 2011, Pages 498-504, doi:20.1016/j.compfluid/2010.07.018
43. Rémi Abgrall, A Residual Distribution Method Using Discontinuous Elements for the Computation of Possibly Non Smooth Flows, *Adv. Appl. Math. Mech.*, 2 (2010), pp. 32-44.
44. R. Abgrall and S. Karni, A comment on the computation of non-conservative products, *J. Comput Phys.*, vol 229 (8), pp 2759-2763, 2010.
45. M. Ricchiuto, R. Abgrall, Explicit Runge Kutta schemes for time dependent problems: second order case, *J. Comput. Phys.*, 229(16), pp 5653-5691, 2010.
46. Rémi Abgrall and Jirka Treflík, An example of high order residual distribution scheme using non-Lagrange elements. *J. Sci Comput.*, 45, No. 1-3, 3-25 (2010)
47. R. Abgrall, R. Huart and P. Ramet, Numerical simulation of unsteady MHD flows and applications, *Magnetohydrodynamics*, Vol. 45, No. 2, 225-232, 2009
48. Rémi Abgrall et Chi-Wang Shu, Development of residual distribution schemes for the discontinuous Galerkin methods : the scalar case. *Communications in Computational Physics*, vol 5, pp 376-390, 2009.
49. R. Abgrall, M. Ricchiuto, A. Larat and C. Tavé, Simplified stabilization procedures for Residual Distribution schemes, *Comp. Fluids*, vol 39(7), pages 1314-1323, 2009
50. R. Abgrall and S. Karni, Two-layer shallow water system: a relaxation approach. *SIAM J. Sci Comput.* Vol 31(3), pp 1603-1627, 2009
51. R. Abgrall, Construction of simple, stable, and convergent high order schemes for steady first order Hamilton-Jacobi equations, *SIAM J. Sci Comput.*, vol 31(4), pp 2419-2446, 2009
52. N. Villedieu, T. Quintino, R. Abgrall and H. Deconinck, High-order residual distribution schemes on quadrilateral meshes., *Int. J. Numer Meth. Fluids*, vol 56(8), pp 1559-1566, 2008.
53. R. Saurel, F. Petitpas, R. Abgrall, Modelling phase transition in metastable liquids: application to cavitating and flashing flows, *J. Fluid. Mech.* Vol 607. pp 313-350, 2008.
54. R. Abgrall, V. Perrier, On the numerical approximation of first-order Hamilton-Jacobi equations, *Int. J. Appl. Math. Comput. Sci*, vol 17(3), pp 403-412, 2007.

55. Pierre-Henri Maire, Rémi Abgrall, Jérôme Breil, and Jean Ovadia. A Lagrangian scheme for multi-dimensional compressible flow problems. *SIAM J. on Scientific Computing*, vol. 29, number 4, page 1281-1824, 2007.
56. R. Abgrall and V. Perrier, On the numerical approximation of first order Hamilton Jacobi equations, *International Journal of Applied Mathematics and Computer Science*, 17(3):403–412, 2007. doi:10.2478/v100006-007-0033-0.
57. Rémi Abgrall., Hypersonic calculations by Riemann solvers techniques. *Comput. Phys. Commun.*, 65(1-3):1-7, 1991.
58. R. Abgrall, M. Papin, and L. Hallo, A scheme for compressible two-phase flows and interface problems. Chen, Zhangxin (ed.) et al., *Current trends in scientific computing. ICM 2002 Beijing satellite conference on scientific computing, August 15-18, 2002, Xi'an, China*. Providence, RI: American Mathematical Society (AMS). *Contemp. Math.* 329, 1-12 (2003).
59. Mario Ricchiuto, Rémi Abgrall, and Hermann Deconinck. Analysis of a class of conservative residual schemes with application to the solution of the shallow water equations on unstructured meshes. *J. Comput. Phys.*, 222(1): 287-331, 2007
60. Mario Ricchiuto, Nadège Villedieu, Rémi Abgrall, and Herman Deconinck. Construction of uniformly accurate residual distribution schemes for advection-diffusion problems. *J. Computational and Applied Mechanics, J. Comput Appl. Math.*, vol 215(2), pp 547-556, 2008.
61. Rémi Abgrall and Vincent Perrier. Asymptotic expansion of a multiscale numerical scheme for compressible multiphase flows. *SIAM Multiscale and Modelisation in Science*, 5(1):84–115, 2006.
62. Rémi Abgrall. Residual distribution schemes: current status and future trends. *Computer and Fluids*, 35(7):641-669, 2006.
63. Rémi Abgrall. Essentially non oscillatory residual distribution schemes for hyperbolic problems. *J. Comput. Phys.*, 214(2):773-808, 2006.
64. Rémi Abgrall and Fabien Marpeau. Residual distribution schemes on quadrilateral meshes. *J. Scientific Computing*, 30(1):131-175, 2007, doi 10.1007/s10915-005-9023-2
65. Rémi Abgrall, Michel Ravachol, and Séverin Marret. The simulation of the linearized Euler equations by a second order scheme is possible. *Int. J. on Aeroacoustics*, 4(1-2):49–68, 2005.
66. Rémi Abgrall, Nikola Andrianov, and Mohamed Mezine. Towards very high-order accurate schemes for unsteady convection problems on unstructured meshes. *Int. J. Numer. Methods Fluids*, 47(8-9):679-691, 2005.
67. Mikaël Papin and Rémi Abgrall. Entropic closure laws for two-fluid seven equation models. *C. R. Acad. Sci. Mécanique*, 333(11):838-842, 2005.
68. Rémi Abgrall and Mohamed Mezine. Construction of second-order accurate monotone and stable residual distribution schemes for steady problems. *J. Comput. Phys.*, 195(2):474–507, 2004.
69. Raphal Loubère, Jean Ovadia, and Rémi Abgrall. A Lagrangian discontinuous Galerkin-type method on unstructured meshes to solve hydrodynamics problems. *Int. J. Numer. Methods Fluids*, 44(6):645-663, 2004.
70. Rémi Abgrall and Richard Saurel. Discrete equations for physical and numerical compressible multi-phase mixtures. *J. Comput. Phys.*, 186(2):361-396, 2003.
71. Rémi Abgrall and Mohamed Mezine. Construction of second order accurate monotone and stable residual distribution schemes for unsteady flow problems. *J. Comput. Phys.*, 188(1):16-55, 2003.

72. Rémi Abgrall, Boniface Nkonga, and Richard Saurel. Efficient numerical approximation of compressible multi-material flow for unstructured meshes. *Comput. Fluids*, 32(4):571-605, 2003.
73. Germain Billet and Rémi Abgrall. An adaptive shock-capturing algorithm for solving unsteady reactive flows. *Comput. & Fluids*, 32(10):1473-1495, 2003.
74. Rémi Abgrall. Numerical Discretisation of boundary conditions for first order Hamilton–Jacobi equations. *SIAM J. Numer. Anal.*, 41(6):2233-2261, 2003.
75. Rémi Abgrall and Philip L.Roe, High-order fluctuation schemes on triangular meshes. *J. Sci. Comput.*, 19(1-3):3-36, 2003.
76. Jacques Massoni, Richard Saurel, Boniface Nkonga, and Rémi Abgrall. Some models and Eulerian methods for interface problems between compressible fluids with heat transfer. *Int. J. Heat Mass Transfer*, 45(6):1287-1307, 2002.
77. Rémi Abgrall and Timothy Barth. Residual distribution schemes for conservation laws via adaptive quadrature. *SIAM J. Sci. Comput.*, 24(3):732-769, 2002.
78. Rémi Abgrall. Toward the ultimate conservative scheme: Following the quest. *J. Comput. Phys.*, 167(2):277-315, 2001.
79. Rémi Abgrall and Smadar Karni. Computations of compressible multifluids. *J. Comput. Phys.*, 169(2):594-623, 2001.
80. Rémi Abgrall, Thierry Colin, and Boniface Nkonga. Étude du système de Schrödinger-Bloch modélisant la propagation d'un laser dans un gaz. *C. R. Acad. Sci. Paris Sér. I Math.*, 333(7):689-692, 2001.
81. Steeve Augoula and Rémi Abgrall. High order numerical discretization for Hamilton-Jacobi equations on triangular meshes. *J. Sci. Comput.*, 15(2):197-229, 2000.
82. Rémi Abgrall, Stéphane Lantéri, and Thomas Sonar. ENO approximations for compressible fluid dynamics. *ZAMM, Z. Angew. Math. Mech.*, 79(1):3-28, 1999.
83. Richard Saurel and Rémi Abgrall. A multiphase Godunov method for compressible multifluid and multiphase flows. *J. Comput. Phys.*, 150(2):425-467, 1999.
84. Richard Saurel and Rémi Abgrall. A simple method for compressible multifluid flows. *SIAM J. Sci. Comput.*, 21(3):1115-1145, 1999.
85. Rémi Abgrall and Jean-David Benamou. Big Ray Tracing and Eikonal Solver on Unstructured Grids: Application to the Computation of a Multi-valued Travel-time Field. *Geophysics*, 64(1):230-239, January-February 1999.
86. Rémi Abgrall and Ami Harten. Multiresolution representation in unstructured meshes. *SIAM J. Numer. Anal.*, 35(6):2128-2146, 1998.
87. Rémi Abgrall and Thomas Sonar. On the use of Mhlbach expansions in the recovery step of ENO methods. *Numer. Math.*, 76(1):1-25, 1997.
88. Rémi Abgrall. Numerical discretization of the first-order Hamilton-Jacobi equation on triangular meshes. *Commun. Pure Appl. Math.*, 49(12):1339-1373, 1996.
89. Rémi Abgrall. How to prevent pressure oscillations in multicomponent flow calculations: a quasi-conservative approach. *J. Comput. Phys.*, 125(1):150-160, 1996.
90. Rémi Abgrall. Approximation du problème de Riemann vraiment multidimensionnel des équations d'Euler par une méthode de type Roe. I. La linéarisation. *C. R. Acad. Sci. Paris Sér. I Math.*, 319(5):499-504, 1994.

91. Rémi Abgrall. Approximation du problème de Riemann vraiment multidimensionnel des équations d'Euler par une méthode de type Roe. II. Solution du problème de Riemann approché. C. R. Acad. Sci. Paris Sér. I Math., 319(6):625-629, 1994.
92. Rémi Abgrall. On essentially non-oscillatory schemes on unstructured meshes: Analysis and implementation. J. Comput. Phys., 114(1):45-58, 1994.
93. Rémi Abgrall. An essentially non-oscillatory reconstruction procedure on finite-element type meshes: Application to compressible flows. Comput. Methods Appl. Mech. Eng., 116:95-101, 1994.
94. Didier Chargy, Rémi Abgrall, Loula Fézoui, and Bernard Larrouturou. Conservative numerical schemes for multicomponent inviscid flows. Rech. Aérospat., (2):61-80, 1992.
95. Rémi Abgrall, Loula Fezoui, and Jean Talandier. An extension of Osher's Riemann solver for chemical and vibrational non- equilibrium gas flows. Int. J. Numer. Methods Fluids, 14(8):935-960, 1992.
96. Rémi Abgrall. Sur le comportement asymptotique des coefficients de certaines approximations polynomiales. C. R. Acad. Sci. Paris Sér. I Math., 315(1):97-100, 1992.
97. Rémi Abgrall. Hypersonic calculations by Riemann solvers techniques. Comput. Phys. Commun., 65(1-3):1-7, 1991.
98. Rémi Abgrall. An extension of Roe's upwind scheme to algebraic equilibrium real gas models. Comput. Fluids, 19(2):171-182, 1991.
99. Rémi Abgrall and Jean-Louis Montagné. Generalization of the Osher scheme for calculating flows of mixed gases of variable concentrations, and of real gases. Rech. Aérospat., (4):1-13, 1989.
100. Rémi Abgrall. Generalization of the Roe scheme for the computation of mixture of perfect gases. Rech. Aérospatiale (English edition), 1988-6:31-43, December 1988.
101. Rémi Abgrall and Claude Basdevant. Un schéma numérique semi-lagrangien pour la turbulence bidimensionnelle. C. R. Acad. Sci. Paris Sér. I Math., 305(7):315-318, 1987.

2 Edition of special issues

1. Abgrall, Rémi (ed.) ; Koren, Barry (ed.) Computational science for energy research. J. Comput. Phys. 345, A1 (2017).
2. Abgrall, Rmi (ed.) Frontiers in computational physics: modeling the Earth system. J. Comput. Phys. 271, 1 (2014).
3. R. Abgrall and P.H. Maire, Computers and Fluids, Special issue containing a selection of the papers presented in Multimath11, Computers & Fluids, volume 83, 2013.
4. R. Abgrall, D. Aregba, M. J. Castro Diaz, C. Pares Madronal, J. Sci. Computing, special issue on shallow water flow problems and source term approximation. J. Sci. Comput. 48, No. 1-3, 349 p. (2011).
5. R. Abgrall and Jianxian Qiu (editors), Special issue High Order Methods for CFD Problems J. Comput Physics, Volume 230, Issue 11, Pages 4101-4376.
6. Rémi Abgrall and Hervé Guillard (editors) Special issue: Low Mach number flows. Selected papers based on the presentation at the international conference, Porquerolles Island, France, June 21-25, 2004. ESAIM, Math. Model. Numer. Anal., 39(3):437-621, 2005.
7. Rémi Abgrall and Hermann Deconinck (editors). Special issue : Residual distribution schemes, discontinuous Galerkin schemes, multidimensional schemes and mesh adaptation. Computer and Fluids, 34(4-5):399-640, 2005.

3 Articles in referred proceedings

1. Abgrall, Rémi and Bacigaluppi, Paola Design of a second-order fully explicit residual distribution scheme for compressible multiphase flows. (English) Zbl 1368.76068 Cancès, Clément (ed.) et al., Finite volumes for complex applications VIII - hyperbolic, elliptic and parabolic problems. FVCA 8, Lille, France, June 12-16, 2017. Cham: Springer (ISBN 978-3-319-57393-9/hbk; 978-3-319-57394-6/ebook; 978-3-319-58818-6/set). Springer Proceedings in Mathematics & Statistics 200, 257-264 (2017).
2. R. Abgrall, P. Bacigaluppi, S. Tokareva, How to avoid mass matrix for linear hyperbolic problems, Numerical mathematics and advanced applications-ENUMATH 2015, 75?86, Lect. Notes Comput. Sci. Eng., 112, Springer, [Cham], 2016.
3. Abgrall, Rmi Author Profile On a class of high order schemes for hyperbolic problems. (English) Zbl 1377.65146 Jang, Sun Young (ed.) et al., Proceedings of the International Congress of Mathematicians (ICM 2014), Seoul, Korea, August 13?21, 2014. Vol. IV: Invited lectures. Seoul: KM Kyung Moon Sa (ISBN 978-89-6105-807-0/hbk; 978-89-6105-803-2/set). 699-725 (2014).
4. Abgrall, Rémi and Dallet, Sophie An asymptotic preserving scheme for the barotropic Baer-Nunziato model. (English) Fuhrmann, Jrgen (ed.) et al., Finite volumes for complex applications VII - elliptic, parabolic and hyperbolic problems. Proceedings of the FVCA 7, Berlin, Germany, June 15?20, 2014. Vol. II. Cham: Springer (ISBN 978-3-319-05590-9/hbk; 978-3-319-05591-6/ebook; 978-3-319-06402-4/set). Springer Proceedings in Mathematics & Statistics 78, 749-757 (2014). MSC: 76
5. R. Abgrall and V. Perrier, A Numerical Scheme for Compressible Multiphase Flows, In Computational Fluid Dynamics 2004, Proceedings of the Third International Conference on Computational Fluid Dynamics, ICCFD3, Toronto, 16 July 2004 Proceedings of the Third International Conference on Computational Fluid Dynamics, ICCFD3, Toronto, July 2004. C. Groth and D.W. Zingg editors, Springer Verlag, 2006. doi 0.1007/3-540-31801-1
6. Rémi Abgrall and Smadar Karni. Ghost-fluids for the poor: a single fluid algorithm for multifluids. In Hyperbolic problems: theory, numerics, applications, Vol. I, II (Magdeburg, 2000), volume 141 of Internat. Ser. Numer. Math., 140, pages 1–10. Birkhuser, Basel, 2001.
7. Rémi Abgrall. Multiresolution analysis on unstructured meshes: Application to CFD. Chetverushkin, B. N. (ed.) et al., Experimentation, Modelling and computation in flow, turbulence and combustion. Vol. 2. Proceedings of the 3rd French-Russian-Uzbek workshop on Fluid dynamics, Tashkent, Uzbekistan, April 23–28, 1995. Chichester: Wiley. CMAS: Computational Methods in Applied Sciences. 147-156 (1997)., 1997.
8. Rémi Abgrall and Mohamed Mezine. A compact residual scheme for unsteady compressible flow problems. In Armfield, S. (ed.) et al., Computational fluid dynamics 2002. Proceedings of the second international conference on computational fluid dynamics, ICCFD, Sydney, Australia, July, 15-19, 2002. Berlin: Springer. 165-170. 2003.
9. Rémi Abgrall, Katherine Mer, and Boniface Nkonga. A Lax-Wendroff type theorem for residual schemes. In Hafez, M. M. (ed.) et al., Innovative methods for numerical solutions of partial differential equations. Proceedings of the symposium on progress in numerical solutions of partial differential equations, Arcachon, France, July 11-13, 1998. In honor of Phil Roe on the occasion of his 60th birthday. Singapore: World Scientific. 243-266. 2002.
10. Rémi Abgrall and Timothy Barth. New results for residual distribution schemes. In Toro, E. F. (ed.), Godunov methods. Theory and applications. International conference, Oxford, GB, October 1999. New York, NY: Kluwer Academic/ Plenum Publishers. 27-43. 2001.

11. Laurence Gozalo and Rémi Abgrall. A new limiter that improves TVD-MUSCL schemes. In Toro, E. F. (ed.), *Godunov methods. Theory and applications. International conference, Oxford, GB, October 1999*. New York, NY: Kluwer Academic/ Plenum Publishers. 411-417. 2001.
12. Rémi Abgrall and Smadar Karni. Ghost-fluids for the poor: a single fluid algorithm for multifluids. In *Hyperbolic problems: theory, numerics, applications, Vol. I, II (Magdeburg, 2000)*, volume 141 of *Internat. Ser. Numer. Math.*, 140, pages 1–10. Birkhuser, Basel, 2001.
13. Steeve Augoula and Rémi Abgrall. A discontinuous projection algorithm for Hamilton Jacobi equations. In Cockburn, Bernardo (ed.) et al., *Discontinuous Galerkin methods. Theory, computation and applications. 1st international symposium on DGM, Newport, RI, USA, May 24-26, 1999*. Berlin: Springer. *Lect. Notes Comput. Sci. Eng.* 11, 255-261. 2000.
14. Rémi Abgrall. Construction of genuinely multidimensional upwind distributive schemes. In Vilsmeier, Roland (ed.) et al., *Finite volumes for complex applications II. Problems and perspectives. Papers from the 2nd international conference, Duisburg, July 19-22, 1999*. Paris: Hermes Science Publications. 3-10. 1999.
15. Rémi Abgrall. A third-order ENO scheme on unstructured meshes. Application to shock wave calculations. In Brun, Raymond (ed.) et al., *Shock waves at Marseilles I. Hypersonics, shock tube and shock tunnel flow. Proceedings of the 19th international symposium on shock waves, held at Marseilles, France, 26-30 July 1993*. Berlin: Springer-Verlag. 427-432 . 1995.
16. Rémi Abgrall. Multiresolution analysis on unstructured meshes: Application to CFD. In Morton, K. W. (ed.) et al., *Numerical methods for fluid dynamics V. Proceedings of the conference, Oxford, UK, April 1995*. Oxford: Clarendon Press. 271-277 . 1995.
17. Rémi Abgrall and Agnès Merlo. Calculation of an hypersonic nozzle flow by a second order upwind scheme on unstructured meshes. In Abgrall, Désideri, Glowinski, Mallet, and Périaux, editors, *Hypersonic Flows for Reentry Problems, volume II*, pages 1131-1144. Springer Verlag, 1993.
18. Rémi Abgrall and Agnès Merlo. Calculation of a viscous hypersonic nozzle flow by an implicit second order upwind scheme using unstructured meshes. In *Proceedings of the 13th International Conference on Numerical Fluid Dynamics, volume 414*, pages 340-344. Springer Verlag, 1992.
19. Rémi Abgrall, Jean-Antoine Désideri, Michel Mallet, Jacques Périaux, Pierre Perrier, and Bruno Stoufflet. *Synthesis of the Workshop on Hypersonic Flows for Reentry Problems, Antibes, France, January 1990 and April 1991*. Springer Verlag, 1992
20. Rémi Abgrall. Calculation of non equilibrium flows in a high enthalpy wind tunnel. In Désideri, Glowinski, and Périaux, editors, *Hypersonic Flows for Reentry Problems, volume II*, pages 1131-1144. Springer Verlag, 1991.
21. Rémi Abgrall. Extension of Roe’s approximate Riemann solver to equilibrium and non-equilibrium flows. In P.Wesserling, editor, *Note on Numerical Fluid Mechanics, number 29 in Lecture Notes in Physics*, 1990.

4 Books

1. Abgrall, Rémi, Shu, Chi-Wang (ed.) *Handbook on numerical methods for hyperbolic problems. Applied and modern issues.* (English) Zbl 1364.65001 *Handbook of Numerical Analysis* 18. Amsterdam: Elsevier/North Holland (ISBN 978-0-444-63910-3/hbk; 978-0-444-63911-0/ebook). xix, 589 p. (2017).

2. Abgrall, Rémi (ed.), Shu, Chi-Wang (ed.) Handbook of numerical methods for hyperbolic problems. Basic and fundamental issues. (English) Zbl 1352.65001 Handbook of Numerical Analysis 17. Amsterdam: Elsevier/North Holland (ISBN 978-0-444-63789-5/hbk; 978-0-444-63795-6/ebook). xxiii, 641 p. (2016).
3. Hervé Guillard and Rémi Abgrall. Modélisation numérique des fluides compressibles. (Numerical modelling of compressible fluids). Series in Applied Mathematics (Paris). vol 5. Paris: Gauthier-Villars. Amsterdam: North-Holland/ Elsevier, VIII, 174 p. , 2001.

5 Chapters in books

1. Abgrall, R. and Mishra, S. Uncertainty qualification for hyperbolic systems of conservation laws. (English) Zbl 1368.65205 Abgrall, Rémi (ed.) et al., Handbook on numerical methods for hyperbolic problems. Applied and modern issues. Amsterdam: Elsevier/North Holland (ISBN 978-0-444-63910-3/hbk; 978-0-444-63911-0/ebook). Handbook of Numerical Analysis 18, 507-544 (2017).
2. Abgrall, R. Some failures of Riemann solvers. (English) Zbl 1366.76058 Abgrall, Rémi (ed.) et al., Handbook on numerical methods for hyperbolic problems. Applied and modern issues. Amsterdam: Elsevier/North Holland (ISBN 978-0-444-63910-3/hbk; 978-0-444-63911-0/ebook). Handbook of Numerical Analysis 18, 351-360 (2017).
3. Rémi Abgrall, First order schemes for the Euler equations, in “Numerical Methods for Hyperbolic Equations”, CRC Press / Balkema, Taylor & Francis Group, 2011.
4. Rémi Abgrall, A biased short review of the residual distribution schemes for hyperbolic problems, Advances in Computational Fluid Dynamics, World Scientific, 2011.
5. Rémi Abgrall. New advances in Computational Fluid Dynamics : Theory, Methods and Applications, volume 2 of Series in Contemporary Applied Mathematics, chapter Residual distributive schemes for compressible flows. Higher education press, Pekin, Chine, 2001, Proceeding d’une conférence tenue à Xian, RP Chine, du 6 au 17September 2000.
6. Rémi Abgrall, Thomas Sonar, Oliver Friedrich, and Germain Billet. High order approximations for compressible fluid dynamics on unstructured and Cartesian meshes. In Barth, Timothy J. (ed.) et al., High-order methods for computational physics. Berlin: Springer. Lect. Notes Comput. Sci. Eng. 9, 1-67. 1999.
7.] Rémi Abgrall. Upwind and High Resolution Schemes, chapter Design of an Essentially Non Oscillatory reconstruction procedure for finite element type meshes, pages 519-549. Springer Verlag, 1998.
8. Rémi Abgrall. Some preliminary results in multiresolution analysis on unstructured meshes: Application to CFD. In Chetverushkin, B. N. (ed.) et al., Experimentation, Modelling and computation in flow, turbulence and combustion. Vol. 2. Proceedings of the 3rd French-Russian-Uzbek workshop on Fluid dynamics, Tashkent, Uzbekistan, April 23–28, 1995. Chichester: Wiley. CMAS: Computational Methods in Applied Sciences. 147-156 . 1997.

6 Lecture Notes

1. Rémi Abgrall. Construction of high-order residual distribution schemes for scalar problems, preliminary results for systems. In CFD-higher order discretization methods. von Kàrman Institute, 2005.
2. Mario Ricchiuto, Nadège Villedieu, Rémi Abgrall, and Hermann Deconinck. High-order residual distribution schemes: discontinuity capturing crosswind dissipation and extension to advection-diffusion. In CFD-higher order discretization methods. von Kàrman Institute, 2005.

3. Hermann Deconinck and Rémi Abgrall. Introduction to residual distribution methods. In CFD-higher order discretization methods. von Kàrman Institute, 2005.
4. Mario Ricchiuto, Rémi Abgrall, and Hermann Deconinck. Very high order fluctuation splitting schemes for unsteady scalar advection. In von Kàrman Institute Lecture Series, March 2003.
5. Mohamed Mezine, Mario Ricchiuto, Rémi Abgrall, and Hermann Deconinck. Monotone and stable residual distribution schemes on prismatic space-time elements for unsteady conservation Laws. In von Kàrman Institute Lecture Series, March 2003.
6. Rémi Abgrall and Mohamed Mezine. Residual distribution schemes for steady problems. In von Kàrman Institute Lecture Series, March 2003.
7. Rémi Abgrall and Frédéric Lafon. ENO schemes on unstructured meshes. In Lecture series 1993-04. von Kàrman Institute, 1993.

7 Miscellaneous: habilitations, AIAA papers, etc. Selection

1. Göktürk Kuru, Marta de la Llave Plata, Vincent Couaillier, Remi Abgrall, Frédéric Coquel, An Adaptive Variational Multiscale Discontinuous Galerkin Method For Large Eddy Simulation (AIAA 2016-0584) 54th AIAA Aerospace Sciences Meeting, 2016, 10.2514/6.2016-0584
2. High order preserving residual distribution schemes for the laminar and turbulent Navier Stokes on arbitrary grids (AIAA 2013-2562) Remi Abgrall, D. De Santis 21st AIAA Computational Fluid Dynamics Conference, 2013, doi:10.2514/6.2013-2562
3. Julie Tryoen, Pietro Congedo, Remi Abgrall, Nadège Villedieu, Thierry Magin, Sensitivity analysis and characterization of the uncertain input data for the EXPERT vehicle 51st AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, 2013, 10.2514/6.2013-956
4. High order residual distribution scheme for Navier-Stokes equations Remi Abgrall, D De Santis 20th AIAA Computational Fluid Dynamics Conference, 2011, doi:10.2514/6.2011-3231 Hawaii, June 27-30, 2011.
5. Hermann Deconinck, Kurt Sermeus, and Rémi Abgrall. Status of multidimensional upwind distribution schemes and applications in aeronautics. AIAA paper 2000-2328, June 2000. doi:10.2514/6.2000-2328 AIAA CFD Conference, Denver (USA).
6. Rémi Abgrall. Contribution à la simulation numérique d'écoulements compressibles inertes ou réactifs. Habilitation à diriger des recherches, Université de Nice, Numerical Analysis, June 1995.
7. R. Abgrall, J.A. Désideri, M. Mallet, J. Périaux, B. Stoufflet The European Data Base - A new CFD validation tool for the design ofspace vehicles 23rd Fluid Dynamics, Plasmadynamics, and Lasers Conference, 1993, 10.2514/6.1993-3045
8. Marc Dormieux, Philippe Guillen, and Rémi Abgrall. Numerical simulations of transverse jet flows by a non reactive two species multidomain Euler flow solver. AIAA paper 90-0126, 28th Aerospace Sciences Meeting, Reno, Nevada., January 1990, doi:10.2514/6.1990-126