

# **Institut Jean Le Rond $\partial$ 'Alembert**

**Liste complète des publications 2012-2017**

## Equipe « Combustion, Energies Propres et Turbulence » (CEPT)

2012

1. M.-J. Thoraval, K. Takehara, Takeharu G., S. Popinet, P. Ray, C. Josserand, S. Zaleski, and Sigurdur T. von Kármán Vortex Street within an Impacting Drop, *Phys. Rev. Lett.* 108, 264506 (2012)
2. Grandjean H., Jacques N., and Zaleski S., Shock Propagation in Liquids Containing Bubbly Clusters: A Continuum Approach *J. Fluid Mech.*, 701, pp 304-332 (2012)
3. M. Kashif, J. Bonnet, P. Guibert, C. Morin, and G. Legros, Soot volume fraction fields in unsteady axis-symmetric flames by continuous laser extinction technique, *Optics Express* 20, p.28742–28751, (2012).
4. T.T Vu, P. Guibert, Proper orthogonal decomposition analysis for cycle-to-cycle variations of engine flow. Effect of a control device in an inlet pipe, *Exp Fluids* (2012) 52:1519–1532
5. G. A. Gerolymos, C. Lo, I. Vallet, Tensorial representations of Reynolds-stress pressure-strain redistribution, *ASME J. Appl. Mech.*, vol. 79, 044506(1–10) (2012), doi:10.1115/1.4005558
6. G. A. Gerolymos, Representation of the Lagrange reconstructing polynomial by combination of substencils, *J. Comp. Appl. Math.* Vol. 236, pp. 2763–2794 (2012) doi :10.1016/j.cam.2012.01.008
7. G. A. Gerolymos, A general recurrence relation for the weight-functions in Muhlbach-Neville-Aitken representations with application to WENO interpolation and differentiation, *Appl. Math. Comp.*, vol 219, pp. 4133-4142 (2012) doi :10.1016/j.amc.2012.09.044
8. G. A. Gerolymos, C. Lo, I. Vallet, B. Younis, Term-by-term analysis of near-wall second moment closures, *AIAA J.*, vol. 50, pp. 2848-2864 (2012), doi: 10.2514/1.J051654
9. K. Leistner, A. Nicolle, P. Da Costa, Impact of the Catalyst/Soot Ratio on the Contribution of Non-catalytic pathways to Diesel Soot Oxidation by Pt/Ce0.73Zr0.27O2, *Energy and Fuels*, 2012, 26 (10), pp 6091–6097
10. D. Adouane, P. Darcy, H. Dutilleul, P. Guibert, P. Da Costa, Impact of thermal and engine ageing on a fully formulated lean NOx Trap, *SAE-12FFL-0274*
11. n. rankovic, c. chizallet, a. nicolle, p. da costa, A molecular approach for unraveling surface phase transition: sulfation of BaO as a model NOx trap, *Chemistry A European Journal*, Volume 18, Issue 34, (2012) pp 10511–10514, DOI: 10.1002/chem.201103950
12. K. Leistner, A. Nicolle, P. da Costa Detailed Kinetic Analysis of Soot Oxidation by NO2, NO and NO+O2, *J. Phys. Chem. C*, 2012, 116 (7), pp 4642–4654
13. A. Manigrasso, P. Darcy, P. Da Costa Hysteresis effect study on Diesel Oxidation Catalyst for a better efficiency of SCR systems, *Catalysis Today* 191 (1) , (2012), 52-58, ,
14. k. leistner, a. nicolle, d. berthout, p. da costa Kinetic Modelling of the Effect of Material Structure on the Oxidation of Carbonaceous Materials, *Combustion and flame* 159 (2012), 64-76
15. K. Leistner, A. Nicolle, P. Da Costa Modeling the Kinetics of NO oxidation and NOx storage over Platinum, Ceria and Ceria zirconia, *Applied Catalysis, B: Env*; 111-112; (2012) 415-423
16. Tchoufag, J., Sagaut, P., Cambon, C. A spectral approach to finite Reynolds number effects on Kolmogorov's 4/5 law in isotropic turbulence. *Phys. Fluids* 24, 015107 (2012)
17. Han, X., Sagaut, P., Lucor, D., Afgan, I. Stochastic response of the laminar flow past a flat plate under uncertain inflow conditions. *Int. J. Computational Fluid Dynamics* 26(2), 101-117 (2012)
18. Meldi, M., Salvetti, M.V., Sagaut, P., Quantification of errors in large-eddy simulations of a spatially-evolving mixing layer using polynomial chaos *Phys. Fluids* 24, 035101 (2012)
19. Han, X., Sagaut, P., Lucor, D. On sensitivity of RANS simulations to uncertain turbulent inflow conditions. *Computers & Fluids* 61, 2-5
20. Garnier, E., Pamart, P.Y., Dandois, J., Sagaut, P. Evaluation of unsteady RANS capabilities for separated flows control. *Computers & Fluids* 61, 39-45 (2012)
21. Malaspinas, O., Sagaut, P. Consistent subgrid scale modelling for lattice Boltzmann methods. *J. Fluid Mech.* 700, 514-542 (2012)
22. Bocquet, S., Jouhaud, J.C., Sagaut, P. A compressible wall model for large-eddy simulation with application to prediction of aerothermal quantities, *Phys. Fluids* 24, 065103 (2012)
23. Xu, H., Malaspinas, O., Sagaut, P. Sensitivity analysis and determination of free relaxation parameters for the

- weakly-compressible MRT-LBM schemes. *J. Comput. Phys.* 231, 7335-7367 (2012)
24. Vergnault, E., Malaspinas, O., Sagaut, P. A lattice Boltzmann method for non linear disturbances around an arbitrary base flow. *J. Comput. Phys.* 231 (24), 8070-8082 (2012)
  25. Thiagalingham, I., Sagaut, P. On the Eddy-Wave Crossover and Bottleneck effect in He III-B Superfluid Turbulence, *Phys. Fluids* 24, 115109 (2012)
  26. Meldi, M., Sagaut, P. On non-self similar regimes in homogeneous isotropic turbulence decay *J. Fluid Mech.* 711, 364-393 (2012)
  27. J.C. Chassaing, D. Lucor, J. Trégon, Stochastic nonlinear aeroelastic analysis of a supersonic lifting surface using an adaptative spectral method. *Journal of Sound and Vibration* 331 (2), 394-411 (2012)
  28. G Poette, D. Lucor, Non intrusive iterative stochastic spectral representation with application to compressible gas dynamics *Journal of Computational Physics* 231 (9), 3587-3609 (2012)
  29. R. Bourguet, D. Lucor, M.S. Triantafyllou Mono- and multi-frequency vortex-induced vibrations of a long tensioned beam in shear flow *Journal of Fluids and Structures* 32, 52-64 (2012)
  30. G Poette, D. Lucor, A stochastic surrogate model approach applied to calibration of unstable fluid flow experiments *Comptes Rendus Mathématique* 350 (5-6), 319-324 (2012)
  31. L. Danaila, J.F. Krawczynski, F. Thiesset, B. Renou Yaglom-like equation in axisymmetric anisotropic turbulence *Physica D* 241, p.216-223, 2012

## 2013

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2. D. Fuster "An energy preserving formulation for the simulation of multiphase turbulent flows" *Journal of Computational Physics*. Vol. 235. pp. 114-128. (2013)
3. G. A. Gerolymos, D. Sénéchal, I. Vallet, "Wall effects on pressure fluctuations in turbulent channel flow", *J. Fluid Mech.*, vol. 720, pp. 15--65 (2013), doi:10.1017/jfm.2012.633
4. G. A. Gerolymos, "Filtered chorochronic periodicity for multistage turbomachinery computations", *Int. J. Comp. Fluid Dyn.*, vol. 27, pp. 100--117 (2013), doi:10.1080/10618562.2013.772984
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8. C. Ozhan, D. Fuster, P. Da Costa A New MultiResolution Model for Catalytic Converter Systems *Proceedings of 4th European Conference of Chemical Engineering (ECCE13) Recent Advances in chemical Engineering, Biochemistry and Computational chemistry* (2013) 11-18, Editors J.A. Duarte Moller, M. R. Kibler, R. Hefferlin, ISBN978-960-474-342-1 OPEN ACCESS
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10. H. Bel Hadjltaief, M. E. Gálvez, P. Da Costa, M. Ben Zina Influence of operational 1 parameters in the heterogeneous photo-Fenton discoloration of wastewaters in the presence of a Fe-pillared clay *Industrial and Engineering Chemistry Research* 52 (47), (2013) pp. 16656-16665.
11. N. Rankovic, C. Chizallet, A. Nicolle, P. Da Costa Multiscale modeling of barium sulfate formation from BaO *Industrial and Engineering Chemistry Research*, 2013, 52 (26), pp 9086–9098, DOI: 10.1021/ie401687d
12. M. Foix, C. Guyon, M. Tatoulian, P. Da Costa Microwave Plasma Treatment for catalyst preparation: application to alumina supported silver catalysts for SCR NOx by ethanol, *Modern Research in Catalysis*, 2013, 2, 68-82, doi:10.4236/mrc.2013.23011, OPEN ACCESS
13. M. Radlik, M. Adamowska, A. Łamacz, A. Krztoń, P. Da Costa, W. Turek Study surface evolution of nitrogen species on Cu/CeZrO2 catalyst *Reaction Kinetics Mechanisms and Catalysis* 109 (2013) [Issue 1](#), pp 43-56,
14. D. Adouane, S. Capela, P. Da Costa On the efficiency of NH3-SCR catalysts for heavy-duty vehicles running on Compressed Natural gas in synthetic gas bench scale *Topics in catalysis* (2013) May 2013, Volume 56, [Issue 1-8](#), pp 45-49, DOI 10.1007/s11244-013-9927-2
15. N. Rankovic, A. Nicolle, D. Berthout, P. Da Costa Multi-scale modelling study of barium nitrate reduction in NOx traps *Topics in catalysis* (2013) May 2013, Volume 56, [Issue 1-8](#), pp 140-144

16. N. Lamharess, L. Starck, C.N Millet and P. Da Costa Effect of Biofuels on Catalyzed Diesel Particulate Filter Regeneration Topics in catalysis (2013) May 2013, Volume 56, [Issue 1-8](#), pp 462-466, DOI 10.1007/s11244-013-9997-1
17. M. Adamowska, V. Lauga, P. Da Costa Elaboration of an accelerated oven CNG heavy duty vehicles catalyst ageing for road ageing simulation Topics in catalysis (2013) May 2013, Volume 56, [Issue 1-8](#), pp 267-272
18. D. Adouane, M. Teixeira, P. Da Costa Influence of catalyst composition on NOx Trap performances Topics in catalysis (2013) May 2013, Volume 56, [Issue 1-8](#), pp 261-266, DOI 10.1007/s11244-013-9964-x
19. N. Rankovic, C. Chizallet, A. Nicolle, D. Berthout, P. Da Costa Sulfur deactivation of NOx storage catalysts: a multiscale modeling approach Oil & Gas Science and Technology (2013), <http://dx.doi.org/10.2516/ogst/2013123>
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24. Afgan, I., Benhamadouche, S., Han, X., Sagaut, P., Laurence, D. Flow Over a Flat Plate with Uniform Inlet and Incident Coherent Gusts J. Fluid Mech. 720, 457-485 (2013)
25. Druault, P., Marchiano, R., Sagaut, P. Localization of aeroacoustic sound sources in viscous flows by a time reversal method J. Sound & Vibrations 332, 3655-3669 (2013)
26. Vergnault, E., Malaspinas, O., Sagaut, P. Noise source identification with the Lattice Boltzmann method. J. Acoust. Soc. Am. 133, 1293-1305 (2013)
27. De Marinis, D. Chibbaro, S., Meldi, M., Sagaut, P. Temperature dynamics in decaying isotropic turbulence with Joule heat production, J. Fluid Mech. 724, 425-449
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31. E Bollache, N Kachenoura, F Frouin, A Redheuil, E Mousseaux, D. Lucor, Numerical modeling of arterial pulse wave propagation to characterize aortic hemodynamic: Validation using magnetic resonance data, IRBM 34 (1), 86-89 (2013)

## 2014

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2. D. Fuster, J.M. Conoir, T. Colonius. "Effect of direct bubble-bubble interactions on linear wave propagation in bubbly liquids". Physical Review E, 90, 063010. (2014).
3. J. Rodriguez, A. Casado, D. Fuster "Physics of beer tapping". Physical Review Letters, 113, 214501 (2014).
4. L. Deike, D. Fuster, M. Berhanu, E. Falcon, "Direct numerical simulations of capillary wave turbulence". Physical Review Letters, 112, 234501 (2014).
5. C. Ozhan, D. Fuster, P. Da Costa, "Multi-scale flow simulation of automotive catalytic converters". Chemical Engineering Science, 116, 161-171 (2014).
6. D. Fuster, K. Pham, S. Zaleski, "Stability of bubbly liquids and its connection to the process of cavitation inception" Physics of Fluids, 26, 042002, (2014).
7. R. Dębek, A. Gramatyka, M. Motak, P. Da Costa Produkcja gazu syntezowego w reakcji suchego reformingu metanu na katalizatorach hydrotalkitowych Syngas production from dry reforming of methane over hydrotalcite-derived catalysts Przemysł Chemiczny, 93/12 2014, 2026-2032, DOI: [dx.medra.org/10.12916/przemchem.2014.2026](http://dx.medra.org/10.12916/przemchem.2014.2026)
8. Malgorzata Julia Adamowska, P. Da Costa, "Structured Pd/γ-Al<sub>2</sub>O<sub>3</sub> prepared by washcoated deposition on a ceramic honeycomb for compressed natural gas applications," Journal of Nanoparticles (number 601941) 2014. (Hindawi), accepted for publication, OPEN ACCESS

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11. M. Adamowska, O. Haddad, D. Leguillon, P. Da Costa On the comprehension of mechanical, thermal and chemical evolutions of exhaust gases aftertreatment catalysts *Advanced Materials Forum* 783-786 (2014) 1979-85
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2. D. Fuster, F. Montel. "Mass transfer effects on linear wave propagation in diluted bubbly liquids." *Journal of Fluid Mechanics*, 779, 598-621 (2015).
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6. M. Kashif, J. Bonnetty, A. Matynia, P. Da Costa, and G. Legros Sooting propensities of some gasoline surrogate fuels: combined effects of fuel blending and air vitiation, *Combustion & Flame* 162, p.1840-1847, 2015.
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  17. R. Dębek, K. Zubek, M. Motak, M.E. Galvez, P. Da Costa, T. Grzybek Ni-Al hydrotalcite-like material as the catalysts precursors for the dry reforming of methane *Comptes Rendus de Chimie*, Volume 18, Issue 11, Pages 1205-1210 (November 2015)
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