

## **Thématique : Mécanique des Fluides Numérique**

### **Publications internationales avec comité de lecture**

- R. Oguic, S. Viazzo & S. Poncet, A parallelized multidomain compact solver for incompressible turbulent flows in cylindrical geometries, *Journal of Computational Physics*, 300, 710-731, 2015
- A. Aubert, S. Poncet, P. Le Gal, S. Viazzo & M. Le Bars, Velocity and temperature measurements in a turbulent water-filled Taylor–Couette–Poiseuille system, *International Journal of Thermal Sciences*, 90:238-24, 2015
- S. A. Ghaffari, S. Viazzo, K. Schneider & P. Bontoux, Simulation of forced deformable bodies interacting with two-dimensional incompressible flows: Application to fish-like swimming, *International Journal of Heat and Fluid Flow*, 51, 88-109, 2015
- S. Poncet, S. Viazzo & R. Oguic, Large Eddy Simulations of Taylor-Couette-Poiseuille flows in a narrow-gap system, *Physics of Fluids*, 26(10), 1070-6631, 2014
- S. Viazzo & S. Poncet, Numerical simulation of the flow stability in a high aspect ratio Taylor–Couette system submitted to a radial temperature gradient, *International Journal Computers & Fluids*, 101, 15-26, 2014
- S. Poncet, T. D. Nguyen, S. Harmand, J. Pellé, R. Da Soghe, C. Bianchini & S. Viazzo, Turbulent impinging jet flow into an unshrouded rotor–stator system: Hydrodynamics and heat transfer, *International Journal of Heat and Fluid Flow*, 44, 719-734, 2013
- S. Poncet, R. Da Soghe, C. Bianchini, S. Viazzo & A. Aubert, Turbulent Couette-Taylor flows with endwall effects: a numerical benchmark, *International Journal of Heat and Fluid Flow*, 44, 229-238, 2013
- H. Barrios, S. Viazzo & C. Rey, A numerical study of laminar and transitional mixed convection flow over a backward-facing step, *International Journal Computers & Fluids*, 56, 77-91, 2012
- S. Viazzo, S. Poncet, E. Serre & P. Bontoux, High-order Large Eddy Simulations of confined rotor-stator flows, *Flow, Turbulence and Combustion*, 88 (1-2), 63-75, 2012
- L. Isoardi, H. Bufferand, G. Chiavassa, G. Ciraolo, F. Schwander, E. Serre, S. Viazzo, N. Fedorczak, Ph. Ghendrih, J. Gunn, Y. Sarazin & P. Tamain, 2D modeling of ion and electron temperature in the plasma edge and SOL, en cours de révision dans *Journal of Nuclear Materials*, 415, 5574-5578, 2011
- S. Poncet, S. Haddadi & S. Viazzo, Numerical modeling of fluid flow and heat transfer in a narrow Taylor-Couette-Poiseuille system, *International Journal of Heat and Fluid Flow*, 32 (1), 128-144, 2011

### **Congrès internationaux et nationaux**

- S. Bhattacharjee, G. Ricciardi & S. Viazzo, Modeling of fluctuating fluid forces exerted on the walls of a concentric annular pipe using Large Eddy Simulation, NURETH-16, Chicago, IL, August 30-September 4, 2015
- R. Oguic, S. Viazzo, S. Poncet, Simulations numériques directes d'écoulements turbulents dans un compresseur haute-pression simplifié, 22ème Congrès Français de Mécanique, Lyon, 08/2015
- S.A. Ghaffari, K. Schneider, S. Viazzo, P. Bontoux, Simulation de la nage d'un poisson avec changement de direction représenté par un corps, 22ème Congrès Français de Mécanique, Lyon, 08/2015

- A. Randriamampianina, U. Harlander, M. Vincze, T. Seelig, T. von Larcher & S. Viazzo, Inertia gravity waves linked to baroclinic waves in a rotating differentially heated annulus with an upper free surface, 19<sup>th</sup> International Couette-Taylor Workshop ICTW19, Cottbus, June 22-24, 2015, Germany
- T. von Larcher, U. Harlander, T. Seelig, A. Randriamampianina & S. Viazzo. Multiple scales in the thermally driven rotating annulus : time-series data analysis of experiments and numerics, 19th International Couette-Taylor Workshop ICTW19, Cottbus, June 22-24, 2015, Cottbus, Germany
- R. Oguic, S. Viazzo, S. Poncet, Simulations numériques d'un jet turbulent en impact et des transferts thermiques dans une machine discoïde, Colloque Inter-universitaire Franco-Québécois sur la Thermique des systèmes CIFQ2015, Sherbrooke, 06/2015
- S. Poncet & S. Viazzo, Instabilités thermo-convectives dans un système de Taylor-Couette de grand allongement par simulations numériques directes, Colloque Inter-universitaire Franco-Québécois sur la Thermique des systèmes CIFQ2015, Sherbrooke, 06/2015
- U. Harlander, T. Seelig, M. Gellert, S. Viazzo, C. Egbers & G. Rüdiger, Stratorotational Instability: nonlinear aspects at higher Reynolds numbers, EUROMECH Colloquium 567: Turbulent mixing in stratified flows, DAMTP, Cambridge, UK, 22-25 March 2015
- A. Randriamampianina, U. Harlander, M. Vincze, T. Seelig, T. Von Larcher & S. Viazzo, Inertia gravity waves linked to baroclinic waves in a rotating, differentially heated annulus with an upper free surface. EUROMECH Colloquium 567: Turbulent mixing in stratified fluids, Mar 2015, Cambridge, United Kingdom.
- T. Von Larcher, U. Harlander, A. Randriamampianina & S. Viazzo, Application of advanced methods of time-series analysis for investigating multi-scale flow phenomena in a thermally driven rotating annulus. EUROMECH Colloquium 567: Turbulent mixing in stratified fluids, Mar 2015, Cambridge, United Kingdom
- S. Poncet & S. Viazzo, Boundary layers properties for turbulent Taylor-Couette-Poiseuille flows in a narrow-gap cavity, 25th Canadian Congress of Applied Mechanics (CANCAM 2015), London
- C. Friess, S. Poncet, S. Viazzo, Benchmark of turbulence modelings in a Taylor-Couette-Poiseuille system, 10th ERCOFTAC Int. Symp. Eng. Turbulence Modelling Measurements, Marbella, 2014
- P. Bontoux, S. Viazzo, K. Schneider & S.A. Ghaffari, An efficient algorithm for simulation of forced deformable bodies interacting with incompressible flows; Application to fish swimming. 11th World Congress on Computational Mechanics, Minisymposium 5th European Conference on Computational Mechanics (ECCM V), Barcelona, Spain, July 2014.
- S.A. Ghaffari, K. Schneider, S. Viazzo & P. Bontoux, Multi-resolution analyses of incompressible flows interaction with forced deformable bodies. 11th World Congress on Computational Mechanics, Minisymposium 6th European Conference on Computational Fluid Mechanics (ECFD VI), Barcelona, Spain, July 2014
- C. Friess, S. Poncet & S. Viazzo, An extensive study on LES, RANS and hybrid RANS/LES simulation of a narrow-gap open Taylor-Couette Flow, 9th Symposium on DNS, LES, and Hybrid RANS/LES Methods FEDSM2014, Chicago, USA 2014
- C. Friess, S. Poncet & S. Viazzo, Taylor-Couette-Poiseuille flows : from RANS to LES, 8th Int. Symp. Turb. Shear Flow Phenomena, Poitiers, France 2013
- A. Aubert, T. Thouveny, M. Le Bars, P. Le Gal, S. Poncet & S. Viazzo, Transferts de chaleur et de masse dans des écoulements turbulents de Taylor-Couette avec flux axial, Congrès Français de Thermique - SFT 2013 Thermique & Contexte incertain, Gérardmer, 28-31 May 2013

R. Oguic, S. Viazzo & S. Poncet, , Numerical simulations of a narrow gap turbulent Taylor-Couette-Poiseuille flow, Direct and Large-Eddy Simulation 9, Dresden, 3-5 April 2013.

S. Poncet, T. D. Nguyen, S. Harmand, J. Pellé & S. Viazzo, Transferts de chaleur et de masse dans un système discoïde de type rotor-stator, XIème Colloque Interuniversitaire Franco-Québécois sur la Thermique des Systèmes, Reims, 3-5 June 2013.

S. Poncet, S. Viazzo, Thermo-hydrodynamic instabilities in a high aspect ratio Couette-Taylor system using Direct Numerical Simulation, European Fluid Mechanics Conference 9, Roma, 9-13 September 2012

R. Guillermin, R. Da Soghe, S. Poncet & S. Viazzo, Benchmark numérique des écoulements de Couette-Taylor turbulents, XXème Congrès Français de Mécanique, Besançon 28 août-02 septembre 2011

R. Guillermin, R. Da Soghe, C. Bianchini, S. Poncet & S. Viazzo, Numerical predictions of flow field inclosed and opened Taylor-Couette cavities, European Conference for Aerospace Sciences (EUCASS 4), Saint-Petersburg, 4-8 July 2011

### **Séminaires**

S. Viazzo, Direct and Large Eddy Simulations of rotating flows, Séminaire Technische Universität Cottbus (BTU), Allemagne, 01 juin 2013

S. Viazzo, Méthodes d'ordre élevé pour la simulation d'écoulements turbulents incompressibles, Séminaire du LAMPS, Université de Perpignan, 01 décembre 2011

S. Viazzo & E. Serre, Towards High-Order Large Eddy Simulations of Cross-Flow type T-junction, 15th ERCOFTAC SIG15/IAHR Workshop on Refined Turbulence Modelling, EDF Chatou, France, 17-18 october 2011

S. Viazzo & S. Poncet, Etudes numériques d'écoulements confinés soumis à la rotation, Journée d'Etudes du groupe Modes de Transfert – Convection de la SFT, Paris 21 juin 2011

### **Conférences invités**

S. Viazzo, M. Médale & E. Serre, Méthodes Numériques et Thermique, Congrès Français de Thermique, Perpignan, 24-27 mai 2011

### **Conférences**

T. Von Larcher, U. Harlander, T. Seelig, A. Randriamampianina & S. Viazzo. Multi-scale flow phenomena in the thermally driven rotating annulus. Bifurcations and Instabilities in Fluid Dynamics, Jul 2015, Paris, France

P. Bontoux, S.A. Ghaffari, K. Schneider & S. Viazzo, Simulation of deformable fish-like bodies interacting in an incompressible flows. Journées Scientifiques en l'honneur de J.P. Caltagirone, ENSCBP, Bordeaux, 10-11 juillet 2014.