

Prof. Damien VIOLEAU

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EDUCATION

- **Ecole des Ponts ParisTech** Paris, France
4th rank French engineering college Sep. 1992 – Jun. 1996
- **Habilitation à Diriger des Recherches** Univ. Toulon, France
Physical Oceanography and Physics of the environment Oct. 2010

AWARDS

- **Arthur T. Ippen Award** 2015
Delivered by IAHR
"For outstanding contributions in the field of fluid mechanics with special emphasis on turbulence modeling for addressing complex, real-life hydraulics problems"
- **Student prizes**
13 prizes have been delivered to my PhD students:
 - **M. Ferrand**: Libersky Prize winner, 2010
 - **A. Mayrofer**: 2nd and 3rd on the Libersky Prize contest, 2012 and 2013
 - **A. Leroy**: Twice Libersky Prize winner, 2013 and 2014; Prix Valembois, 2015
 - **A. Ghaïtanellis**: Libersky Prize winner, 2017
 - **R. Carmigniani**: 3rd on the Libersky Prize contest, 2017; PhD Award from Ecole des Ponts, 2018; 3rd on the Gehrard Jirka Prize contest, 2018
 - **T. Fonty**: Twice Libersky Prize winner, 2018 and 2019; Prix Valembois, 2020

EXPERIENCE

- **Electricité de France (EDF)** <https://www.edf.fr/en/meta-home>
Senior engineer May 1997 – Present
 - **Smoothed Particle Hydrodynamics (SPH)**: Turbulence models, boundary conditions, numerical stability, time marching schemes, incompressibility, software development, multi-physics, real-world applications.
 - **Turbulence**: Explicit algebraic stress models, stochastic processes, passive and active scalar diffusion, numerical modelling.
 - **Water waves**: Spectral waves, dynamics of tsunamis, non-linear dispersive waves.
 - **Design of water works**: Coastal dykes, dam spillways, scale models.
 - **Miscellaneous**: Coastal engineering, sediment transport, coast flooding, climate change, oil spills, algal blooms, frazil ice, clogging, statistics of extreme events, etc.
 - **Project management**: Leader in several local, national and European projects.
 - **Team management**: Teams of *ca.* 10 people, young and experienced fellows.
- **Laboratoire d'Hydraulique Saint-Venant** <http://stvenant.saezam.website/accueil>
Senior researcher 2006 – Present
 - **Research activities**: SPH, turbulence, water waves.

- **Supervising:** PhD and MSc students, post-doc fellows (see below).

- **The University of Manchester** Manchester, UK
Marie Curie fellowship *2008 – 2011*
 - **SPH:** Team working within a European project, during 6 weeks per year.
- **Aérospatiale (now Airbus Group)** Suresnes, France
Research engineer *Sep. 1995 – Jun. 1996*
 - **Electromagnetics:** Theoretical, experimental and numerical work on materials for stealth aircrafts.

SUPERVISING AND JURY MEMBERSHIP

- **PhD students**
 - *Supervising or co-supervising (C)*
 - **Réza Issa (2002 – 2004, C):** Numerical Assessment of the Smoothed Particle Hydrodynamics Gridless Method for Incompressible Flows and its Extension to Turbulent Flows
 - **Eun-Sug Lee (2004 – 2007, C):** Truly Incompressible Approach for Computing Incompressible Flow in SPH and Comparisons with the Traditional Weakly Compressible Approach
 - **Jean-Christophe Marongiu (2004 – 2007, C):** Méthode numérique lagrangienne pour la simulation d'écoulements à surface libre – Application aux turbines Pelton
 - **Antoine Joly (2008 – 2011):** Turbulent Diffusion Modelling of Algal Bloom in Coastal Waters through a Stochastic Approach
 - **Martin Ferrand (2009 – 2010, MPhil):** Unified Semi-Analytical Wall Boundary Conditions for Inviscid, Laminar and Turbulent Slightly Compressible Flows in SPARTACUS-2D Combined with an Improved Time Integration Scheme on the Continuity Equation
 - **Arno Mayrhofer (2010 – 2013):** An Investigation into Wall Boundary Conditions and Three-Dimensional Turbulent Flows using Smoothed Particle Hydrodynamics
 - **Agnès Leroy (2012 – 2014):** A New Incompressible SPH Model: Towards Industrial Applications
 - **Emmanuel Dombre (2012 – 2016):** Non-Linear Modelling of Wave-Structure Interactions Applied to Offshore Wind Turbines
 - **Marine Le Gal (2014 – 2017):** Influence of Time Scales on the Dynamics of Seismic-Generated Tsunamis
 - **Alex Ghaïtanellis (2014 – 2017):** Modeling Sediment Bed-Load Transport through a Granular Approach with SPH
 - **Rémi Carmigniani (2014 – 2017):** Ocean Waves Rectifiers: Toward a Novel Way to Harvest Waves Energy
 - **Ismail Rifai (2015 – 2018, C):** Overtopping-Induced Fluvial Dike Failure
 - **Roberto Frau (2015 – 2018, C):** Using historical data in the regional analysis of extreme coastal events: the FAB method
 - **Thomas Fonty (2016 – 2019):** Modeling air entrainment in water with the SPH method

- **Martin Ferrand (2017 – 2020)**: Title to be defined
- **Andreia Borges Moreira (2016 – 2020, C)**: Using GPUSPH for modelling spillway flows
- **Antoine Villefer (2016 – present, C)**: Modelling combined swell and windwave sea-states

- **Jury membership**

- *Excluding supervised PhDs (see above)*

- **Habilitation à Diriger des Recherches**: Kamal El-Kadi Abderrezzak
- **PhD defenses**: Julien Leduc, Matthieu De Leffe, Yohan Blacodon, Magdalena Neuhauser
- **PhD reviewer**: Ashkan Rafiee, Jie Zhao, Laurent Chiron, Anthony Collé, Thomas Douillet-Grellier, Imadeddine Hammani, Alban Vergnaud
- **Master of Philosophy**: Olivier Cozzi

- **Post-doc fellows**

- *Under collaboration agreements (C)*

- **Eun-Sug Lee (2008 – 2009)**: Implementation of a 3D projection method in SPH
- **Alexander Vorobyev (2012 – 2013, C)**: New developments in the GPUSPH software
- **Arno Mayrhofer (2013 – 2016, C)**: Consolidation of the GPUSPH software
- **Virginie Hergault (2014 – 2015)**: Eulerian–Lagrangian coupling
- **Jérémie Chicheportiche (2015 – 2016)**: Eulerian–Lagrangian coupling
- **Athanasios Mokos (2018 – 2020)**: SPH modelling of nuclear power plant flooding and dam spillway waterfalls
- **Alex Ghaitanellis (2018 – 2020, C)**: Sediment transport implementation in GPUSPH

- **Internship students**

- *ca. 25 MSc students*: Six-months internships
- **5 one-year research students**: Asven Gariah, Martin Ferrand, Omar Mahmood, Louise Fratter, Eki Agouzal

SCIENTIFIC COMMUNITIES

- **IAHR**

2003 – Present

- *International Association for Hydro-environmental Research and Engineering*

- **Council member**: 2014 – 2015, 2018 – 2021
- **Journal of hydraulic Research**: Associate Editor, 2015 – Present
- **Committee on Fluid Mechanics**: Member of the leading team, 2020 – Present
- **Committee on IAHR publications**: Member of the leading team, 2020 – Present
- **Innovation and Professional Development**: Vice-Chair, 2016 – 2019
- **Maritime Hydraulics Section**: Secretary, 2006 – 2007

- **SPHERIC**

2005 – Present

- *SPH rEsearch and engineeRing International Community*

- **Founder**: Oct. 2005

- **Chairman:** Oct. 2005 – June 2010
- **Steering Committee member:** 2005 – 2020
- **Newsletter Editor:** 2005 – 2017

- **SHF** 2005 – Present
Société Hydrotechnique de France
 - **Comité Scientifique et Technique:** Deputy member, 2010 – Present
 - **Section Hydraulique Maritime:** Chair, 2005 – 2014
 - **Comité Europe-International:** Member, 2010 – 2014
 - **La Houille Blanche (journal):** Member of the Editorial Board, 2010 – 2014
- **ERCOFTAC** 2007 – 2010
European Research Community on Flow, Turbulence And Combustion
 - **Scientific Programme Committee:** Member
- **Organisation of conferences**
 - **Chair:** 3 conferences (*ca.* 120 attendees)
 - **Organising Committee member:** 3 conferences (*ca.* 150 attendees)
 - **Scientific Committee member:** 20 conferences
 - **Special sessions in conferences:** 4 special sessions

TEACHING AND DISSEMINATION

- **Professor, Ecole des Ponts ParisTech**
4th rank French engineering college
 - **Mathematics for the engineer (2019 – Present):** Head of the teaching team, 5 hrs/year
 - **SPH Method (2019 – Present):** Head of the teaching team, 13 hrs/year
 - **Fluid Mechanics (2016 – Present):** Head of the teaching team, 39 hrs/year
 - **Numerical hydraulics (2016 – 2017):** Short course + scientific project, 5 hrs/year
 - **Fluid Mechanics (1999 – 2016):** Lecturer, 39 hrs/year
 - **Fluid Mechanics (2009 – 2011):** For students from Ecole Polytechnique, 5 hrs/year
 - **Continuous Media (1998 – 1999):** Lecturer, 18 hrs/year
- **Other courses**
On Fluid Mechanics
 - **Ecole Normale Supérieure de Paris-Saclay (2016 – Present):** 30 hrs/year
 - **EDF R&D (2003 – Present):** 9 hrs every 2 years
 - **The University of Manchester (2010 – 2014):** SPH, 2 hrs/year
 - **Ecole des Ingénieurs de la Ville de Paris (2004 – 2010):** 30 hrs/year
 - **Others (occasional):** Ecole Nationale Supérieure des Techniques Avancées, Centrale Supélec, Ecole Spéciale des travaux Publics
- **Invited/keynote Lectures**

- **The use of SPH in environmental and industrial hydraulics:** Mathias 2016 conference, Paris, 26 Oct. 2016
 - **Smoothed Particle Hydrodynamics: towards complex flow:** General Assembly of French Hydro-Society, Paris, 9 Jun. 2016
 - **Smoothed Particle Hydrodynamics: towards accurate Lagrangian flow prediction:** 16th Conference on Modelling Fluid Flow, Budapest, Sep. 2015
 - **Smoothed Particle Hydrodynamics: a Lagrangian approach to hydraulics:** Arthur Thomas Ippen Lecture, 36th IAHR World Congress, The Hague, Jun. 2015
 - **Smoothed Particle Hydrodynamics: a synthetic model for real-life flows:** SPH and Particle Methods for Fluids and Fluid-Structure Interactions, Lille, Jan. 2015
 - **Smoothed Particle Hydrodynamics: Fresh insights in CFD:** 3rd SimHydro conference, Nice, Jun. 2014
 - **Smoothed Particle Hydrodynamics: From theory to real-life applications:** 1st Sino-French Forum on Water Science, Shanghai Jiao Tong University, Sep. 2013
 - **Numerical stability of SPH for weakly compressible viscous flows: Optimal time-stepping:** 8th SPHERIC International Workshop, Trondheim, Jun. 2013
- **Seminars**
 - **Nonlinear dispersive waves: A journey around the Korteweg–de Vries equation:** EDF R&D, Oct. 2020
 - **Latest advances in the SPH method at EDF & LHSV:** Beuth Hochschule für Technik Berlin, Apr. 2019
 - **How to write a good paper:** 5th IAHR Europ. Conf., Trento, Jun. 2018
 - **SPH: Fundamentals and use in hydraulics at EDF:** Safran workshop on LBM and SPH, Paris, Sep. 2017
 - **SPH: a comprehensive Lagrangian approach for continuous media:** Schlumberger Fluid Mechanics SIG webinar, USA, Nov. 2016)
 - **Smoothed Particle Hydrodynamics : une méthode lagrangienne pour modéliser les fluides:** Ecole des Ponts ParisTech, Paris, Oct. 2014
 - **SPHERIC Grand Challenges and SPH numerical stability:** UK Meshless Methods Network, Manchester, Oct. 2013
 - **SPH for industrial purposes: are we ready for quantitative predictions?:** Conservatoire National des Arts et Métiers, Paris, Jun. 2011
 - **Introduction to SPH:** Training day of the 5th SPHERIC International Workshop, Manchester, Jun. 2010
 - **Smoothed Particle Hydrodynamics: Variational viewpoint and turbulence:** The University of Manchester, Jun. 2009
 - **Smoothed Particle Hydrodynamics for turbulence and applications to environmental flow:** Hamburg University of Technology, Feb. 2008
 - **SPH numerical method and its applications in hydraulics of multiphase flows:** Ecole Normale Supérieure de Cachan, Mar. 2007
 - **The SPH Lagrangian numerical method:** Université Henri Poincaré, Nancy, Jan. 2006
 - **The Telemac system: An integrated tool for environmental CFD:** Technische Universiteit Delft, Sep. 2004

- **The mathematical and numerical modelling of dam breaks and river floods:** ParisTech College, May 2004
- **The numerical modelling of environmental flows:** University of Manchester Institute of Science and Technology, Jun. 2002
- **Summerschools**
 - **TANDEM tsunami school, Inria Bordeaux, Apr. 2016:** “Tsunami impact on the coast: General aspects and simulation tools” and “Tsunami coastal impact: The use of the SPH method”
 - **CEA-EDF-INRIA summerschool on Particle Transport, Numerical Methods and Applications, Paris, Jun. 2009:** “Smoothed Particle Hydrodynamics (SPH): A ‘Physical’ Lagrangian numerical method for fluid simulation and continuous media” and “SPH: Applications to complex flows for industry and the environment”
 - **Ecole Centrale de Lyon, Jul. 2005:** “Mechanical basis of the SPH method” and “The modelling of turbulent flows with SPH”
 - **International Summerschool on Environmental Turbulence and CFD, Escola Universitària Politècnica de Vilanova i la Geltrú, Sep. 2004:** “Introduction to Lagrangian Mechanics and the SPH numerical method” and “The Telemac system: An integrated tool for environmental CFD”

PUBLICATIONS

- **Summary**
 - 2964 citations (1822 since 2016), *h-index* = 23, *i10-index* = 39 Jan. 2021
 - 2 books
 - 2 book chapters
 - 59 journal papers
 - 100 conference papers
 - 26 contributions to bulletins and colloquium papers
 - 5 proceedings and journal special issues as an editor
 - 56 engineering and research reports for EDF
- **Books and Book chapters**
 - **Violeau, D.**, Fluid Mechanics and the SPH Method, *Oxford University Press*, Oxford, 2012, 594 p.
 - Ginocchio, R., Viollet, P.-L., L’Energie Hydraulique, *Lavoisier*, Paris, 2012, 632 p. Participation to the 2nd edition (in French).
 - Viollet, P.-L., Benhamadouche, S., Benoit, M., Chabard, J.-P., **Violeau, D.**, Problèmes Résolus de Mécanique des Fluides avec Rappels de Cours, *Presses des Ponts*, Paris, 2010, 392 p. (in French).
 - Issa, R. , **Violeau, D.**, Lee, E.-S., Flament, H., Modelling nonlinear water waves with RANS and LES SPH models, *in* Advances in Numerical Simulation of Nonlinear Water Waves, edited by Q.W. Ma, Series of Advances in Coastal and Ocean Engineering, Vol. 11, 2010, *World Scientific Publishing Co.*
- **Journal papers**
 - Mokos, A., **Violeau, D.**, De Leffe, M., Sarret, F. (?), *SPH modeling of gravity fall of a water sheet*, In preparation :-.

- **Violeau, D.** (?), *Using Dispersive Shock Wave theories in predicting Favre waves*, In preparation :-.
- Villefer, A., **Violeau, D.**, Benoit, M., Branger, H. (?), *On the interaction of short wind-waves and long mechanically-generated waves*, In preparation :-.
- Ghaitanellis, A., **Violeau, D.**, Liu, P.L.-F., Viard, T. (2021), *SPH simulation of the 2007 Chehalis Lake landslide and subsequent tsunami*, J. Hydr. Res. **10.1080/00221686.2020.1844814**:-.
- Moreira, A., **Violeau, D.**, Taveira-Pinto, F. (?), *Single-phase SPH modelling of plunge pool dynamic pressures at a near-prototype scale*, J. Hydr. Res. (in press) **10.1080/00221686.2020.1862320**:-.
- **Violeau, D.** (2020), *Cosmogenic tsunami risk assessment: a first application to the European Atlantic coasts*, Nat. Haz. (in press) **10.1007/s11069-020-04334-9**:-.
- El Kadi Abderrezzak, Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., Dewals, B. (2020), *Continuous monitoring of fluvial dike breaching by a Laser Profilometry Technique*, Adv. Water Resources (in press) **56**:1–16.
- Fonty, T., Ferrand, M., Leroy, A., **Violeau, D.** (2020), *Air entrainment modeling in the SPH method: a two-phase mixture formulation with open boundaries*, Flow, Turbulence and Combustion **105**:1149–1195.
- Mokos, A., Leroy, A., Carmigniani, R., **Violeau, D.** (2020), *Simulating wave overtopping on a complex dike structure using SPH*, J. Appl. Water Engng. Res. **8**:55–65.
- Rifai, I., El Kadi Abderrezzak, Hager, W., Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., Dewals, B. (2020), *Apparent cohesion effects on overtopping-induced fluvial dike breaching*, J. Hydr. Res. (in press) DOI: **10.1080/00221686.2020.1714760**:-.
- **Violeau, D.**, Fonty, T. (2019), *Calculating the smoothing error in SPH*, Comput. & Fluids **191**:104240-.
- Rifai, I., El Kadi Abderrezzak, Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., Dewals, B. (2019), *Flow and detailed 3D morphodynamic data from laboratory experiments of fluvial dike breaching*, Science Data **6**:1–11.
- Moreira, A., **Violeau, D.**, Leroy, A., Taveira-Pinto, F. (2019), *Overview of Large-Scale Smoothed Particle Hydrodynamics Modeling of Dam Hydraulics*, J. Hydr. Engng. **146**:03119001-.
- Carmigniani, R., Leroy, A., **Violeau, D.** (2019), *A simple SPH model of a free surface water wave pump: Waves above a submerged plate*, Coast. Engng. J. **61**:96–108.
- Fonty, T., Leroy, A., Joly, A., **Violeau, D.**, Ferrand, M. (2019), *Mixture model for two-phase flows with high density ratios: A conservative and realizable SPH formulation*, Int. J. Multiphase Flows **111**:158–174.
- Moreira, A., **Violeau, D.**, Leroy, A., Taveira-Pinto, F. (2019), *Dam spillways and the SPH method: two case studies in Portugal*, J. Appl. Water Engng. Res. **7**:228–245.
- Rifai, I., El Kadi Abderrezzak, K., Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., Dewals, B. (2018), *Floodplain backwater effect on overtopping induced fluvial dike failure*, Water Resources Res. **54**:9060–9073.
- Dombre, E., Harris, J.C., Benoit, M., **Violeau, D.**, Peyrard, C. (2018), *A parallel BEM solver on unstructured triangular grids for fully nonlinear wave-body interactions*, Ocean Engng. **171**:505–518.
- Carmigniani, R., **Violeau, D.** (2018), *Optimal sponge layer for water waves numerical models*, Ocean Engng. **163**:169–182.

- Le Gal, M., **Violeau, D.**, Ata, R., Wang, X. (2018), *Shallow Water Numerical models for the 1947 Gisborne and 2011 Tohoku-Oki tsunamis with kinematic seismic generation*, *Coast. Engng.* **139**:1–15.
- **Violeau, D.**, Hérault, A., Leroy, A., Joly, A. (2018), *Spectral properties of the SPH Laplacian operator*, *Comput. Math. Appl.* **75**:3649–3662.
- Ghaïtanellis, A., **Violeau, D.**, El Kadi Abderrezzak, K., Leroy, A., Joly, A., Ferrand, M. (2018), *A SPH elastic-viscoplastic model for granular flows and bed-load transport*, *Adv. Water Res.* **111**:156–173.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., El Kadi Abderrezzak, K., Dewals, B. (2017), *Overtopping induced failure of non-cohesive, homogeneous fluvial dikes*, *Water Resources Res.* **53**:3373–3386.
- **Violeau, D.** (2017), *A comprehensive presentation of the turbulent plane jet theory with passive scalar*, *Math. Probl. Engng.* **2017**:4369895–.
- Le Gal, M., **Violeau, D.**, Benoit, M. (2017), *Influence of timescales on the generation of seismic tsunamis*, *Eur. J. Mech. B/Fluids* **65**:257–273.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Piroton, M., El Kadi Abderrezzak, K., Dewals, B. (2016), *Discussion: Laboratory study on 3D flow structures induced by zero-height side weir and implications for 1D modeling*, *J. Hydr. Engng.* **143**:07016010–.
- Leroy, A., **Violeau, D.**, Ferrand, M., Fratter, L., Joly, A. (2016), *A new open boundary formulation for incompressible SPH*, *Comput. Math. with Appl.* **72**:2417–2432.
- Carmigniani, R.A., Benoit, M., **Violeau, D.**, Gharib, M. (2016), *Resonance wave pumping with surface waves*, *J. Fluid Mech.* **811**:1–36.
- **Violeau, D.**, Rogers, B.D. (2016), *SPH for free-surface flows: Past, present and future*, *J. Hydr. Res.* **54**:1–26.
- **Violeau, D.** (2016), *Discussion: On analytical formulae for navigation lock filling—emptying and overtravel*, *J. Hydr. Res.* **54**:224–225.
- Ferrand, M., Joly, A., Kassiotis, C., **Violeau, D.**, Leroy, A., Morel, F.-X., Rogers, B.D. (2016), *Unsteady open boundaries for SPH using semi-analytical conditions and Riemann solver in 2D*, *Comput. Phys. Comm.* **210**:29–44.
- **Violeau, D.**, Leroy, A. (2015), *Optimal time step for Incompressible SPH*, *J. Comput Phys.* **288**:119–130.
- Leroy, A., **Violeau, D.**, Ferrand, M., Joly, A. (2015), *Buoyancy modelling with incompressible SPH for laminar and turbulent flows*, *Int. J. Num. Meth. Fluids* **78**:455–474.
- Mayrhofer, A., Laurence, D., Rogers, B.D., **Violeau, D.** (2015), *Simulation of 3-D wall-bounded turbulence using Smoothed Particle Hydrodynamics*, *Comput. & Fluids* **115**:86–97.
- Dombre, E., Benoit, M., **Violeau, D.**, Peyrard, C., Grilli, S.T. (2015), *Simulation of floating structure dynamics in waves by implicit coupling of a fully nonlinear potential flow model and a rigid body motion approach*, *J. Ocean Engng. Marine Energy* **1**:55–76.
- Leroy, A., **Violeau, D.**, Ferrand, M., Kassiotis, C. (2014), *Unified semi-analytical wall boundary conditions for 2-D incompressible SPH*, *J. Comput. Phys.* **261**:106–129.
- Mayrhofer, A., Ferrand, M., Kassiotis, C., **Violeau, D.** (2014), *Unified semi-analytical wall boundary conditions in SPH: Analytical extension to 3-D*, *Num. Alg.* **68**:15–34.
- **Violeau, D.**, Leroy, A. (2014), *On the maximum time step in weakly compressible SPH*, *J. Comput. Phys.* **256**:388–415.

- Mayrhofer, A., Rogers, B.D., **Violeau, D.**, Ferrand, M. (2013), *Investigation of wall bounded flows using SPH and the unified semi-analytical wall boundary conditions*, Comput. Phys. Com. **184**:2515–2527.
- Ferrand, M., **Violeau, D.** (2012), *A family of explicit algebraic models for Reynolds stresses and passive scalar fluxes*, J. Hydr. Res. **50**:494–505.
- Joly, A., **Violeau, D.**, Moulin, F., Astruc, D., Kassiotis, C. (2012), *Transport of isotropic particles in a partially obstructed channel flow: experiments and numerical modelling*, J. Hydr. Res. **50**:324–337.
- Joly, A., Moulin, F., **Violeau, D.**, Astruc, D., Minier, J.-P. (2012), *Diffusion of isotropic macro-particles using a stochastic method: theory and validation against experimental results in grid turbulence*, Phys. Fluids **24**:103303–.
- Ferrand, M., Laurence, D., Rogers, B., **Violeau, D.**, Kassiotis, C. (2012), *Unified semi-analytical wall boundary conditions for inviscid, laminar or turbulent flows in the meshless SPH method*, Int. J. Num. Meth. Fluids **71**:446–472.
- Joly, A., Moulin, F., Cazin, S., Astruc, D., **Violeau, D.** (2011), *Experimental measurements of macro-particle dispersion in grid turbulence and stochastic numerical modeling*, Comput. Meth. Multiphase Flow **4**:107–116.
- Luck, M., Lee, E.-S., Méchitoua, N., **Violeau, D.**, Laugier, F., Blancher, B., Valette, E., Guyot, G. (2010), *Modélisations physique et numérique 3D pour l'évaluation de la débitance et le design des évacuateurs de crue*, La Houille Blanche **6**:74–82.
- Issa, R., Rougé, D., Benoit, M., **Violeau, D.**, Joly, A. (2010), *Modelling algae transport in coastal areas with the shallow water equations*, J. Hydro-Environment Res. **3**:215–223.
- Lee, E.-S., **Violeau, D.**, Issa, R., Ploix, S. (2010), *Application of weakly compressible and truly incompressible SPH to 3-D water collapse in waterworks*, J. Hydr. Res. **48**:50–60.
- **Violeau, D.** (2009), *Dissipative forces for Lagrangian models in computational fluid dynamics and application to smoothed-particle hydrodynamics*, Phys. Rev. E **80**:036705–.
- **Violeau, D.** (2009), *Explicit algebraic Reynolds stresses and scalar fluxes for density-stratified shear flows*, Phys. Fluids **21**:035103–.
- Issa, R., **Violeau, D.** (2009), *Modelling a plunging breaking solitary wave with eddy-viscosity turbulent SPH models*, Comput., Materials and Continua **8**:151–164.
- Lee, E.-S., Moulinec, C., Xu, R., **Violeau, D.**, Laurence, D., Stansby, P. (2008), *Comparisons of weakly compressible and truly incompressible SPH algorithms for 2D flows*, J. Comput. Phys. **227**:8417–8436.
- Moulinec, C., Issa, R., Marongiu, J.-C., **Violeau, D.** (2008), *Parallel 3-D SPH simulations*, Comput. Model. Engng. Sc. **25**:133–148.
- **Violeau, D.**, Lafon, F., Boulet, T., Benoit, M., Goasguen, G. (2008), *Projet DISCOBOLE. Impact du changement climatique sur les aménagements côtiers*, La Houille Blanche **1**:50–60.
- **Violeau, D.**, Buvat, C., Abed-Meraïm, K., de Nanteuil, E. (2007), *Numerical modelling of boom and oil spill with SPH*, Coastal Engng. **54**:895–913.
- **Violeau, D.**, Buvat, C. (2007), *Lagrangian numerical modelling of boom and oil spill*, La Houille Blanche **5**:80–84.
- **Violeau, D.**, Issa, R. (2006), *Numerical modelling of complex turbulent free surface flows with the SPH Lagrangian method: An overview*, Int. J. Num. Meth. Fluids **53**:277–304.

- Issa, R., Lee, E-S., **Violeau, D.**, Laurence, D. (2004), *Incompressible separated flows simulations with the Smoothed Particle Hydrodynamics gridless method*, Int. J. Num. Meth. Fluids **47**:1101–1106.
- **Violeau, D.**, Issa, R. (2003), *La méthode numérique SPH appliquée à l'hydraulique. Une méthode lagrangienne aux applications variées*, Revue Européenne des Eléments Finis **12**:171–190.
- Benoit, M., Aelbrecht, D., Bellue, G., Luck, M., **Violeau, D.** (2002), *Propagation des houles et des surcotes extrêmes vers les côtes et estuaires : apports de la modélisation numérique*, La Houille Blanche **2**:86–89.

- **Conference papers with reviewing**

- Villefer, A., **Violeau, D.**, Benoit, M., Branger, H. (2022), *Wind over paddle-waves: An experimental and numerical approach*, Proc. IAHR World Congress 2022, Granada, Spain.
- **Violeau, D.** (2022), *A simple analytic description of Favre waves*, Proc. IAHR World Congress 2022, Granada, Spain.
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- **Reviewing**

- **1 book and 1 book chapter**
- **J. Fluid Mech.:** 2 papers
- **Phys. Fluids:** 2 papers
- **J. Comput. Phys.:** 5 papers
- **Eur. J. Mech. B/Fluids:** 2 papers
- **Comput. & Fluids:** 2 papers
- **Int. J. Num. Meth. Fluids:** 7 papers
- **Int. J. Num. Meth. Engng.:** 3 papers
- **J. Hydr. Res.:** 8 papers
- **J. Hydr. Engng.:** 3 papers
- **Other journals:** 30 papers