

Prof. Damien VIOLEAU

Webpage

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EDUCATION

- **Ecole Nationale des Ponts et Chaussées** Paris, France
Institut Polytechnique de Paris Sep. 1992 – Jun. 1996
- **Habilitation à Diriger des Recherches** Univ. Toulon, France
Physical Oceanography and Physics of the environment Oct. 2010

AWARDS & DISTINCTIONS

- **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"
- **IAHR Fellowship** 2023
Honoured at the 40th IAHR World Congress
- **Listed among the Top 2% World scientists since 2021** link
by Stanford University #102240 in 2024
- **Student prizes**
16 prizes have been delivered to my PhD students:
 - **M. Ferrand**: Libersky Prize winner, 2010
 - **A. Mayrhofer**: 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
 - **A. Villefer**: IAHR's JF Kennedy Best Paper Award, 2022; Prix Pierre Guével 2022
 - **Pablo Merino Alonso**: Libersky Prize winner, 2023

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, channel waves, storm surges.
 - **Design of water works**: Coastal dykes, dam spillways, scale models.

- **Miscellaneous:** Coastal engineering, sediment transport, coastal flooding, climate change, oil spills, algal blooms, frazil ice, grid clogging, porous media, 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 as main supervisor**
 - **Réza Issa (2002 – 2004):** Numerical Assessment of the Smoothed Particle Hydrodynamics Gridless Method for Incompressible Flows and its Extension to Turbulent Flows
 - **Eun-Sug Lee (2004 – 2007):** Truly Incompressible Approach for Computing Incompressible Flow in SPH and Comparisons with the Traditional Weakly Compressible Approach
 - **Antoine Joly (2008 – 2011):** Turbulent Diffusion Modelling of Algal Bloom in Coastal Waters through a Stochastic Approach
 - **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
 - **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
 - **Thomas Fonty (2016 – 2019):** Modeling air entrainment in water with the SPH method
 - **Martin Ferrand (2017 – 2022):** Free-surface flow simulations with a Lagrangian and an Arbitrary Lagrangian–Eulerian methods
 - **Antoine Villefer (2019 – 2022):** Modelling combined swell and windwave sea-states

- **Coline de Sousa (2021 – present)**: Modeling complex granular materials with SPH
- **Bastien Jouy (2021 – present)**: Numerical modeling of Favre waves
- **Ahmed Yahyaoui (2023 – present)**: Numerical modeling of channel grid clogging
- **PhD students as member of the supervising team**
 - **Jean-Christophe Marongiu (2004 – 2007)**: Méthode numérique lagrangienne pour la simulation d'écoulements à surface libre – Application aux turbines Pelton
 - **Emmanuel Dombre (2012 – 2016)**: Non-Linear Modelling of Wave-Structure Interactions Applied to Offshore Wind Turbines
 - **Ismail Rifai (2015 – 2018)**: Overtopping-Induced Fluvial Dike Failure
 - **Roberto Frau (2015 – 2018)**: Using historical data in the regional analysis of extreme coastal events: the FAB method
 - **Andreia Borges Moreira (2016 – 2020)**: Numerical modelling of spillways and energy dissipators using the Smoothed Particle Hydrodynamics method
 - **Charlie Prétot (2020 – 2021)**: Physic study of swimming races
 - **Arthur Sacher (2024 – 2027)**: regional analysis of extreme coastal events
- **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, Markus Wagner, Marin Lallemand
 - **PhD reviewer**: Ashkan Rafiee, Jie Zhao, Laurent Chiron, Anthony Collé, Thomas Douillet-Grellier, Imadeddine Hammani, Alban Vergnaud, Anne-Fleur Lejeune, Ondrey Kincl, Mohamed Rozki
 - **Master of Philosophy**: Olivier Cozzi
- **Post-doc fellows**
 - *As main supervisor*
 - **Eun-Sug Lee (2008 – 2009)**: Implementation of a 3D projection method in SPH
 - **Alexander Vorobyev (2012 – 2013)**: New developments in the GPUSPH software
 - **Arno Mayrhofer (2013 – 2016)**: Consolidation of the GPUSPH software
 - **Virginie Hergault (2014 – 2015)**: Eulerian-Lagrangian coupling
 - **Jérémie Chicheportiche (2015 – 2016)**: Eulerian-Lagrangian coupling
 - **Athanasios Mokos (2018 – 2021)**: SPH modelling of nuclear power plant flooding and dam spillway waterfalls
 - **Alex Ghaïtanellis (2018 – 2020)**: 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, Alexandre Hamel
 - **Master of Philosophy**: Martin Ferrand (Univ. Manchester, 2009 – 2010)

SCIENTIFIC COMMUNITIES

- **IAHR** 2003 – Present
 - *International Association for Hydro-environmental Research and Engineering*
 - **IAHR Fellow**: Nominated in 2023
 - **Chair of the Nominating Committee**: 2023
 - **Water Monographs Task Force**: Chair, 2020 – Present
 - **Task Force on Gender equity and diversity**: 2019 – Present
 - **Council member**: 2014 – 2015, 2018 – 2021
 - **Journal of hydraulic Research**: Associate Editor, 2015 – 2021
 - **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*
 - **Groupe de développement**: Member, 2023 – present
 - **Comité Scientifique et Technique**: Deputy member, 2010 – 2021
 - **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**: 30+ conferences
 - **Special sessions in conferences**: 9 special sessions

TEACHING AND DISSEMINATION

- **Professor, Ecole Nationale des Ponts et Chaussées**
 - *Institut Polytechnique de Paris*
 - **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
 - **Mathematics for the engineer (2019 – 2023)**: Head of the teaching team, 4 hrs/year
 - **Fluid Mechanics (2009 – 2011)**: For students from Ecole Polytechnique, 5 hrs/year
 - **Continuous Media (1998 – 1999)**: Lecturer, 18 hrs/year
- **Ecole Normale Supérieure de Paris-Saclay**
 - *Université Paris-Saclay, rated 2nd in maths, 3rd in physics by the 2024 Shanghai ranking*
 - **Fluid mechanics for the Civil Engineering 'agrégation' (2016 – Present)**: Head of the teaching team, 30 hrs/year
- **Other courses**
 - *...on Fluid Mechanics*
 - **EDF R&D (2003 – Present)**: 9 hrs every 2-3 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 flows**: 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 and webinars**
 - **Weakly dispersive, fully non-linear waves in open channels**: Indian Institute of Technology Delhi, India, Nov. 2024

- **Standard von Neumann stability analysis of SPH:** SPH Online VI webinar, Oct. 2024
- **Presentation of the IAHR Water Monograph “Contribution to the Theory of Undular Bores. A journey around the Korteweg-de Vries equation”:** IAHR Webinars, Nov. 2022
- **Turbulence modeling with SPH: Challenges and Opportunities:** SPH Online II webinar, Mar. 2021 – Best presentation award
- **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 Nationale des Ponts et Chaussées, 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**
 - **Master Class, 39th IAHR World Congress, Granada, Jun. 2022:** “The Korteweg–de Vries equation and the dynamics of undular bores”
 - **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**
 - 4643 citations (2004 since 2020), *h-index* = 27, *i10-index* = 54 Google Scholar, Nov. 2024
 - 3 books and 1 monograph
 - 2 book chapters, 1 lecture note
 - 71 journal papers
 - 116 conference papers
 - 28 contributions to bulletins and colloquium papers
 - 6 proceedings and journal special issues as an editor
 - 60+ engineering and research reports for EDF
- **Books, Monographs, Book chapters and lectures**
 - **Violeau, D.**, Some basic mathematics and physics required for a good understanding of the Fluid Mechanics course, *Lecture notes of Ecole Nationale des Ponts et Chaussées*, <https://educnet.enpc.fr/course/view.php?id=2018>.
 - **Violeau, D.**, Contribution to the Theory of Undular Bores – A Journey around the Korteweg–de Vries Equation, *IAHR Water Monograph*, <https://www.iahr.org/index/detail/659>.
 - **Violeau, D.**, Fluid Mechanics and the SPH Method, *Oxford University Press*, Oxford, 2012, 594 p.
 - **Violeau, D. et al.**, Hydraulics for Engineers, *in preparation*.
 - 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**
 - Yahyaoui, A., Constantinescu, G., Fonty, T., **Violeau, D.**, El Kadi Abderrezzak, K., Simonin, O., Debenest, G. (), *Simulating the flow in a network on thin cylinders by a porous approach*, in preparation :–.
 - De Sousa, C., Oger, G., Michel, J., **Violeau, D.**, Le Touzé, D. (), *A Riemann solver for porous media in SPH*, in preparation :–.

- Jouy, B., **Violeau, D.**, Ricchiuto, M., Le, M.-H. (), *Experiments on channel Favre waves*, in preparation :-.
- Merino-Alonso, P.E., **Violeau, D.** (), *Spurious energy dissipation in ISPH*, in preparation :-.
- **Violeau, D.** (), *A minimum principle for head losses in open channels with ice cover*, J. Hydr. Res. (submitted) :-.
- Villefer, A., Benoit, M., **Violeau, D.**, Rodrigues-Teles, M.-J., Luneau, C. (), *Wave overtopping of smooth and armoured rubble breakwaters in bimodal sea-state conditions*, Coast. Engng. (submitted) :-.
- Jouy, B., **Violeau, D.**, Ricchiuto, M., Le, M.-H. (2024), *One dimensional modelling of Favre waves in channels*, Appl. Math. Model. **133**:170–194.
- Villefer, A., Benoit, M., **Violeau, D.**, Teles, M., Luneau, C. (2024), *Experimental study of wave overtopping of coastal protections for sea state combining swell and wind waves*, Paralia **14**:s02.1–s02.12.
- **Violeau, D.**, El Kadi Abderrezzak, K., Buvat, C., Gueguen, N., Castro-Orgaz, O. (2024), *Steady free-surface flow in vegetation debris pad clogging trash racks*, J. Hydr. Res. **62(2)**:223–235.
- Schmitz, V., Rifai, I., Kheloui, L., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., El kadi Abderrezzak, K., Dewals, B. (2023), *Main channel width effects on overtopping-induced non-cohesive fluvial dike breaching*, J. Hydr. Res. **61**:601–610.
- Villefer, A., Benoit, M., **Violeau, D.**, Rodrigues-Teles, M.-J. (2023), *Spectral wave modelling of bimodal sea states at laboratory and coastal scales*, Ocean Model. **183**:102182–.
- **Violeau, D.** (2023), *Serre equations in channels and rivers of arbitrary cross-section*, J. Hydr. Engng. **149**:7–04023021.
- Mokos, A., **Violeau, D.**, De Leffe, M., Sarret, F. (2022), *SPH modeling of gravity fall of a water sheet*, J. Hydr. Res. **60**:608–618.
- Villefer, A., **Violeau, D.**, Benoit, M., Luneau, C., Branger, H. (2021), *Influence of following, regular and irregular long waves on wind-wave growth with fetch: An experimental study*, J. Phys. Oceanogr. **51**:3435–3448.
- Ghaïtanellis, A., **Violeau, D.**, Liu, P.L.-F., Viard, T. (2021), *SPH simulation of the 2007 Chehalis Lake landslide and subsequent tsunami*, J. Hydr. Res. **59**:863–887.
- Moreira, A., **Violeau, D.**, Taveira-Pinto, F. (2021), *Single-phase SPH modelling of plunge pool dynamic pressures at a near-prototype scale*, J. Hydr. Res. **59**:888–902.
- **Violeau, D.** (2021), *Cosmogenic tsunami risk assessment: a first application to the European Atlantic coasts*, Nat. Haz. **105**:735–753.
- El Kadi Abderrezzak, Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B. (2020), *Continuous monitoring of fluvial dike breaching by a Laser Profilometry Technique*, Water Resources Res. **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.**, Pirotton, M., Dewals, B. (2020), *Apparent cohesion effects on overtopping-induced fluvial dike breaching*, J. Hydr. Res. **59**:75–87.
- **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.**, Pirotton, 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.**, Pirotton, 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.
- Bilotta, G., Vorobyev, A., Hérault, A., **Violeau, D.**, Del Negro, C. (2017), *SPH for the Simulation of a Dam-Break with Floating Objects*, Progress in Industrial Mathematics at ECMI 2014 :889–897.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, 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.**, Pirotton, 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

- De Sousa, C., Oger, G., Michel, J., Le Touzé, D. **Violeau, D.** (2025), *An SPH model of moving porous media with infiltration*, Proc. IAHR World Congress 2025, Singapore, .
- Yahyaoui, A., *, **D. Violeau, D.** (2025), *Numerical study of the flow in a porous medium consisting of a network of cylinders*, Proc. IAHR World Congress 2025, Singapore, .
- Jouy, B., **Violeau, D.**, Ricchiuto, M. Le, M.-H. (2025), *Numerical modeling of Favre waves in non-prismatic channels with wave breaking*, Proc. Int. Symp. Shallow Flow, Torino, Italy.

- Jouy, B., **Violeau, D.**, Ricchiuto, M. Le, M.-H., Demay, E. (2024), *Favre waves modelling: new experimental data for code validation*, Proc. Int. Symp. Environm. Hydr., Aberdeen, Scotland.
- **Violeau, D.** (2024), *A Two-dimensional analytical storm surge model*, Proc. Int. Symp. Environm. Hydr., Aberdeen, Scotland.
- **Violeau, D.**, Jouy, B., Le, M.-H., Ricchiuto, M. (2023), *Serre and Boussinesq models for Favre waves in trapezoidal cross-sectional channels*, Proc. SimHydro Conference, Chatou, France.
- Merino-Alonso, P.E., **Violeau, D.** (2023), *Energy conservation in ISPH*, Proc. 17th SPHERIC Int. Workshop, Island of Rhodes, Greece.
- De Sousa, C., Oger, G., **Violeau, D.**, Le Touzé, D. (2023), *Modelling elastic structures using SPH: comparison between Riemann-based and diffusive term-based stabilization*, Proc. 17th SPHERIC Int. Workshop, Island of Rhodes, Greece.
- Jouy, B., **Violeau, D.**, Ricchiuto, M., Le, M.-H., Demay, E. (2023), *Using a Boussinesq-type 1-D model to simulate Favre waves*, Proc. IAHR World Congress 2023, Vienna, Austria.
- **Violeau, D.** (2023), *A Serre-like dispersive wave model for prismatic, arbitrary cross-section channels*, Proc. IAHR World Congress 2023, Vienna, Austria.
- **Violeau, D.**, El Kadi Abderrezzak, K., Buvat, C., Gueguen, N., Castro-Organ, O. (2023), *Studying the free surface profile upstream of a grid clogged by aquatic plants*, Proc. IAHR World Congress 2023, Vienna, Austria.
- Jouy, B., Le, M., Ricchiuto, M., **Violeau, D.** (2023), *A Conservative numerical approach for dispersive waves in 1-D channels*, Proc. Computational Fluids Conference 2023, Cannes, France.
- Villefer, A., Benoit, M., **Violeau, D.**, Teles, M., Luneau, C. (2022), *Etude expérimentale de submersion de protections côtières pour des états de mer combinant houle et clapot*, Proc. 17e Journées Nationales Génie Côtier – Génie Civil, Chatou, France.
- Ferrand, M., Dong, Z., **Violeau, D.** (2022), *Boundary integral approach for axisymmetric SPH*, Proc. 16th SPHERIC Int. Workshop, Catania, Italy.
- Villefer, A., Benoit, M., **Violeau, D.**, Rodrigues-Teles, M., Luneau, C., Branger, H. (2022), *Wind-wave modification in the presence of swell: From laboratory observations to coastal scale simulations*, Proc. 28th WISE meeting, Brest, France.
- 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.
- **Violeau, D.** (2022), *Can asteroids determine a tsunami on European Atlantic coasts?*, Proc. IAHR World Congress 2022, Granada, Spain.
- Carmigniani, R., Prétot, C., **Violeau, D.**, Cohen, C., Clanet, C. (2021), *Velocity–Stroke rate in paddle sports*, Proc. Sports Physics Conf. 2021, Lyon, France.
- Villefer, A., Benoit, M., **Violeau, D.**, Rodrigues-Teles, M., Luneau, C., Branger, H. (2021), *Experimental and numerical characterization of swell-type waves effect on wind-sea growth with fetch*, Proc. 27th WISE meeting, Bergen, Norway.

- Rifai, I., Kheloui, L., Bourban, S., Erpicum, S., Archambeau, P., Pirotton, M., **Violeau, D.**, Dewals, B., El Kadi Abderrezak, K. (2021), *Laser Profilometry Technique for Nonintrusive and Subaqueous 3D geometry reconstructions*, Proc. Experimental Methods and Laboratory Instrumentation in Hydraulics, Webinar, -.
- Mokos, A., **Violeau, D.**, Fonty, T., Bercovitz. (2021), *SPH Simulation of Water Chute Disaggregation*, Proc. 15th SPHERIC Int. Workshop, Newark, USA.
- Ghaïtanellis, A., **Violeau, D.**, Liu, P.L.F., Ferrand, M. (2021), *SPH simulation of the 2007 Chehalis Lake landslide and subsequent tsunami*, Proc. 15th SPHERIC Int. Workshop, Newark, USA.
- Rifai, I., El kadi Abderrezak, K., Hager, W., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B. (2020), *Addition of fine material is expected to strengthen fluvial dikes... Does it really?*, Proc. EGU General Assembly, Vienna, Austria.
- Ghaïtanellis, A., **Violeau, D.**, Liu, P.L.-F., Leroy, A., Ferrand, M. (2019), *Simulation of the 2007 Chehalis Lake landslide-generated tsunami with SPH*, Proc. 16th Ann. Meet. Asia Oceania Geosc. Soc., Singapore, Singapore.
- Moreira, A., Manso, P., **Violeau, D.**, Taveira Pinto, F. (2019), *SPH simulation of vertical high-speed jet flow from a circular nozzle with bottom pressures prediction*, Proc. 14th SPHERIC Int. Workshop, Exeter, UK.
- Mokos, A., Carmigniani, R., Leroy, A., **Violeau, D.** (2019), *Simulating wave overtopping on a complex dike structure using GPUSPH*, Proc. 14th SPHERIC Int. Workshop, Exeter, UK.
- Fonty, T., Ferrand, M., Leroy, A., **Violeau, D.** (2019), *A first air entrainment SPH model using a two-phase mixture formulation*, Proc. 14th SPHERIC Int. Workshop, Exeter, UK.
- **Violeau, D.**, Fonty, T. (2019), *Exact calculation of the SPH smoothing error*, Proc. 14th SPHERIC Int. Workshop, Exeter, UK.
- Moreira, A., Leroy, A., **Violeau, D.**, Taveira-Pinto, F. (2019), *Meshfree vs. mesh-based modelling of turbulent flows in dams*, Proc. CMN 2019, Minho, Portugal.
- Fonty, T., Ferrand, M., Leroy, A., **Violeau, D.** (2019), *Air entrainment modelling using a Lagrangian accurate numerical model for high-density ratio two-phase mixtures*, Proc. 10th Int. Conf. Multiphase Flow, Rio de Janeiro, Brasil.
- **Violeau, D.** (2019), *Improving the theoretical prediction of turbulent quantities in a turbulent straight pipe flow*, Proc. IAHR World Congress 2019, Panama City, Panama.
- Ghaïtanellis, A., **Violeau, D.**, Liu, P.L.-F., Leroy, A., Ferrand, M. (2019), *Modelling flows involving highly dynamic interactions between granular material and water with SPH*, Proc. IAHR World Congress 2019, Panama City, Panama.
- Rifai, I., El kadi Abderrezak, K., Dewals, B., Hager, W., **Violeau, D.**, Erpicum, S., Archambeau, P., Pirotton, M. (2019), *Overtopping induced fluvial dike breaching: lessons from experimental and numerical studies*, Proc. IAHR World Congress 2019, Panama City, Panama.
- Fonty, T., Ferrand, M., Leroy, A., Joly, A., **Violeau, D.** (2018), *A Lagrangian accurate numerical model for high-density ratio two-phase mixtures*, Proc. Dispersed Two-Phase Flows, Toulouse, France.
- Fonty, T., Ferrand, M., Leroy, A., Joly, A., **Violeau, D.** (2018), *An upwind scheme for conservative, realizable two-phase mixture SPH model with high density ratios*, Proc. 13th SPHERIC Int. Workshop, Galway, Ireland.
- Moreira, A., Leroy, A., **Violeau, D.**, Taveira Pinto, F. (2018), *Simulating spillway flows with the SPH method*, Proc. 13th SPHERIC Int. Workshop, Galway, Ireland.

- Rifai, I., El kadi Abderrezzak, K., **Violeau, D.**, Erpicum, S., Archambeau, P., Pirotton, M., Dewals, B. (2018), *Experimental and numerical modelling of fluvial dike breaching due to flow overtopping*, Proc. 5th IAHR Europ. Conf., Trento, Italy.
- Carmigniani, R., **Violeau, D.** (2018), *Wave pump: SPH modeling of waves above a submerged plate*, Proc. 5th IAHR Europ. Conf., Trento, Italy.
- Rifai, I., El Kadi Abderrezzak, K., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B. (2018), *Experimental investigation of fluvial dike breaching due to flow overtopping*, Proc. AGU Fall Meeting (submitted), New Orleans, USA.
- Ata, R., Le Gal, M., **Violeau, D.** (2017), *An overview on the capabilities of the Telemac-Mascaret system to deal with tsunamis: Feedbacks from TANDEM project*, Proc. Telemac-Mascaret User Club, Graz, Austria.
- Le Gal, M., Ata, R., **Violeau, D.** (2017), *Capabilities of shallow water equations to reproduce real tsunamis, cases of Tohoku 2011 and Gisborne 1947*, Proc. 14th US Nat. Cong. Comput. Mech., Montreal, Canada.
- Ghaïtanellis, A., **Violeau, D.**, Ferrand, M., Leroy, A., Joly, A. (2017), *Improved elastic-viscoplastic model for SPH simulations of bed-load transport and scouring*, Proc. 12th SPHERIC Int. Workshop, Ourense, Spain.
- Carmigniani, R., Leroy, A., Joly, A., **Violeau, D.** (2017), *Submerged plate wave energy converter SPH simulations: wave mass transport*, Proc. 12th SPHERIC Int. Workshop, Ourense, Spain.
- Fonty, T., Milla Lopez Asiain, J., Leroy, A., Guyot, G., **Violeau, D.**, Joly, A. (2017), *Numerical modelling of the sluice gates of the Rance tidal power station with SPH*, Proc. 12th SPHERIC Int. Workshop, Ourense, Spain.
- **Violeau, D.**, Lind, S., Dehnen, W. (2017), *Convergence rate of the SPH Poisson equation on a Cartesian grid*, Proc. 12th SPHERIC Int. Workshop, Ourense, Spain.
- Loevenbruck, A., Arpaia, L., Ata, R., Gailler, A., Hayashi, Y., Hébert, H., Heinrich, P., Le Gal, M., Lemoine, A., Le Roy, S., Marcer, R., Pedreros, R., Pons, K., Ricchiuto, L., **Violeau, D.** (2017), *Joint numerical study of the 2011 Tohoku-Oki tsunami: Comparative propagation simulations and high resolution coastal models*, Proc. EGU Gen. Assembly, Vienna, Austria.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., El kadi Abderrezzak, K., Dewals, B. (2017), *Fluvial dike breaching due to overtopping: how different is it from dam breaching?*, Proc. EGU Gen. Assembly, Vienna, Austria.
- Dewals, B., Rifai, I., Erpicum, S., Archambeau, P. **Violeau, D.**, Pirotton, M., El kadi Abderrezzak, K. (2017), *A Laser profilometry technique for monitoring fluvial dike breaching in laboratory experiments*, Proc. EGU Gen. Assembly, Vienna, Austria.
- Carmigniani, R., **Violeau, D.**, Gharib, M. (2017), *Resonance wave pumping: wave mass transport pumping*, Proc. 69th Ann. Meeting APS Division of Fluid Dyn., Portland, USA.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B., El kadi Abderrezzak, K. (2017), *Physical modeling of overtopping induced fluvial dike failure*, Proc. 37th IAHR World Conf., Kuala Lumpur, Malaysia.
- Ghaïtanellis, A., **Violeau, D.**, Leroy, A., Joly, A., El-Kadi Abderrezzak, K. (2017), *A SPH sediment model for scouring*, Proc. 37th IAHR World Conf., Kuala Lumpur, Malaysia.
- Carmigniani, R., **Violeau, D.**, Gharib, M. (2017), *Resonance wave pumping: experiment and theory*, Proc. 37th IAHR World Conf., Kuala Lumpur, Malaysia.

- Carmigniani, R., Leroy, A., Joly, A., **Violeau, D.** (2016), *SPH modeling of resonance wave pumping in closed tank: Parametric study*, Proc. 11th SPHERIC Int. Workshop, Munich, Germany.
- Chicheportiche, J., Hergault, V., Yates, M., Raoult, C., Leroy, A., Joly, A., **Violeau, D.** (2016), *Coupling SPH with a potential Eulerian model for wave propagation problems*, Proc. 11th SPHERIC Int. Workshop, Munich, Germany.
- Ghaïtanellis, A., **Violeau, D.**, Leroy, A., Joly, A., Ferrand, M. (2016), *Improved Shields criterion for SPH simulations of bed-load transport and scouring*, Proc. 11th SPHERIC Int. Workshop, Munich, Germany.
- **Violeau, D.**, Hérault, Leroy, A., Joly, A. (2016), *A first spectral analysis of the SPH Laplacian*, Proc. 11th SPHERIC Int. Workshop, Munich, Germany.
- Joly, A., Ferrand, M., **Violeau, D.**, Leroy, A. (2016), *Applying Riemann solvers to open boundaries in free surface and confined flows*, Proc. 11th SPHERIC Int. Workshop, Munich, Germany.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B., El kadi Abderrezzak, K. (2016), *Sensitivity of the breaching process in the case of overtopping induced fluvial dike failure*, Proc. River Flow, Iowa City, USA.
- Bercovitz, Y., Lebert, F., Jodeau, M., Buvat, C., **Violeau, D.**, Pelaprat, L., Hajczak, A. (2016), *LS-PIV procedure applied to a plunging water jet issuing from an overflow nappe*, Proc. 4th IAHR Europ. Conf., Liege, Belgium.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., Dewals, B., El kadi Abderrezzak, K. (2016), *Failure of fluvial dikes: how does the flow in the main channel influence the breach development?*, Proc. 4th IAHR Europ. Conf., Liege, Belgium.
- **Violeau, D. et al.** (2016), *A database of validation cases for tsunami numerical modelling*, Proc. 4th IAHR Europ. Conf., Liege, Belgium.
- Ghaïtanellis, A., **Violeau, D.**, Leroy, Joly, A., Ferrand, M. (2016), *A two-fluid SPH model for landslides*, Proc. 4th IAHR Europ. Conf., Liege, Belgium.
- Le Gal, M., **Violeau, D.** (2016), *Tsunami seismic generation and propagation: Validity of the Shallow Water Equations*, Proc. 4th IAHR Europ. Conf., Liege, Belgium.
- Le Gal, M., **Violeau, D.**, Benoit, M. (2016), *Linear solution for generation of tsunami waves with ground motion and timescales*, Proc. 35th Int. Conf. Coast. Engng., Istanbul, Turkey.
- Rifai, I., Erpicum, S., Archambeau, P., **Violeau, D.**, Pirotton, M., El kadi Abderrezzak, K., Dewals, B. (2016), *Monitoring topography of laboratory fluvial dyke models subjected to breaching based on a laser profilometry technique*, Proc. 13th Int. Symp. on River Sedimentation, Stuttgart, Germany.
- Carmigniani, R., Morteza, G., **Violeau, D.** (2015), *Resonance wave pumping with surface waves*, Proc. 68th Ann. Meeting APS Division of Fluid Dyn., Boston, USA.
- **Violeau, D.** (2015), *Smoothed Particle Hydrodynamics: Towards accurate Lagrangian flow prediction*, Proc. 16th Int. Conf. on Fluid Flow Technol., Budapest, Hungary.
- Ghaïtanellis, A., **Violeau, D.**, Ferrand, M., Leroy, A. (2015), *Application of the unified semi-analytical wall boundary conditions to multi-phase SPH*, Proc. 10th SPHERIC Int. Workshop, Parma, Italy.
- Leroy, A., **Violeau, D.**, Ferrand, M., Joly, A., Fratter, L. (2015), *Open boundary conditions for ISPH with the unified semi-analytical boundary conditions*, Proc. 10th SPHERIC Int. Workshop, Parma, Italy.

- **Violeau, D.**, Leroy, A. (2015), *Chosing the time step in ISPH*, Proc. 10th SPHERIC Int. Workshop, Parma, Italy.
- **Violeau, D.**, Peyrard, C., Dombre, E. (2015), *The use of symplectic time integrators in hydroinformatics*, Proc. 36th IAHR World Conf., The Hague, The Netherlands.
- Leroy, A., **Violeau, D.**, Joly, A., Ferrand, M. (2015), *Buoyancy modeling in SPH with appropriate boundary conditions*, Proc. 36th IAHR World Conf., The Hague, The Netherlands.
- Bilotta, G., Vorobyev, A., Mayrhofer, A., Hérault, A., **Violeau, D.** (2014), *Modelling real-life flows in hydraulic waterworks with GPUSPH*, Proc. 9th SPHERIC Int. Workshop, Paris, France.
- Mayrhofer, A., Laurence, D., Rogers, B., **Violeau, D.** (2014), *Large eddy simulation with SPH: Mission impossible?*, Proc. 9th SPHERIC Int. Workshop, Paris, France.
- Leroy, A., **Violeau, D.**, Ferrand, M., Joly, A. (2014), *Buoyancy modelling with incompressible SPH and unified semi-analytical wall boundary conditions*, Proc. 9th SPHERIC Int. Workshop, Paris, France.
- **Violeau, D.**, Mayrhofer, A., Leroy, A. (2014), *Exact computation of SPH wall renormalising integrals in 3-D*, Proc. 9th SPHERIC Int. Workshop, Paris, France.
- Joly, A., Gagnaire-Renou, E., Benoit, M., **Violeau, D.** (2014), *Numerical modeling of wind waves on a river flood plain*, Proc. 3rd IAHR Europ. Conf., Porto, Portugal.
- **Violeau, D.**, Ferrand, M., Mayrhofer, A., Leroy, A., Vorobyev, A., Hérault, A. (2014), *Application of SPH to real-world free-surface flows*, Proc. 3rd IAHR Europ. Conf., Porto, Portugal.
- Hébert *et al.* (2014), *Project TANDEM (Tsunamis in the Atlantic and the English ChanNel: Definition of the Effects through numerical Modeling) (2014-2018): A French initiative to draw lessons from the Tohoku-oki tsunami on French coastal nuclear facilities*, Proc. EGU Gen. Assembly, Vienna, Austria.
- Kassiotis, C., Ferrand, M., **Violeau, D.** (2013), *Semi-analytical conditions for open boundaries in SPH*, Proc. 8th SPHERIC Int. Workshop, Trondheim, Norway.
- Mayrhofer, A., Laurence, D., Rogers, B.D., **Violeau, D.**, Ferrand, M. (2013), *Direct numerical simulation of 3-D turbulent wall bounded flows with SPH*, Proc. 8th SPHERIC Int. Workshop, Trondheim, Norway.
- Leroy, A., **Violeau, D.**, Ferrand, M., Kassiotis, C. (2013), *Application of the unified semi-analytical wall boundary conditions to incompressible SPH*, Proc. 8th SPHERIC Int. Workshop, Trondheim, Norway.
- Gagnaire-Renou, E., **Violeau, D.**, Delisle, J.-R., Malleron, N., Benoit, M. (2013), *Scale model of overtopping of waves propagating laterally to a structure*, Proc. 35th IAHR World Conf., Chengdu, China.
- **Violeau, D.**, Ferrand, M., Mayrhofer, A., Mahmood, O. (2012), *Correct boundary conditions for turbulent SPH*, Proc. 2nd SimHydro conference, Nice, France.
- Mayrhofer, A., Rogers, B.D., **Violeau, D.**, Ferrand, M. (2012), *Study of differential operators in the context of the semi-analytical wall boundary conditions*, Proc. 7th SPHERIC Int. Workshop, Prato, Italy.
- Mahmood, O., **Violeau, D.**, Kassiotis, C., Rogers, B., Ferrand, M. (2012), *Absorbing inlet/outlet boundary conditions for SPH 2-D turbulent free-surface flows*, Proc. 7th SPHERIC Int. Workshop, Prato, Italy.

- Kassiotis, C., Rogers, B.D., Ferrand, M., **Violeau, D.**, Stansby, P.K., Benoit, M. (2011), *Coupling SPH with a 1-D Boussinesq type wave model*, Proc. 6th SPHERIC Int. Workshop, Hamburg, Germany.
- Mahmood, O., **Violeau, D.**, Kassiotis, C., Ferrand, M., Mayrhofer, A. (2011), *Effect of wall boundary treatment in SPH for modelling turbulent flows with inlet/outlet boundary conditions*, Proc. 6th SPHERIC Int. Workshop, Hamburg, Germany.
- Ferrand, M., Rogers, B., Laurence, D., **Violeau, D.** (2011), *Consistent wall boundary treatment for laminar and turbulent flows in SPH*, Proc. 6th SPHERIC Int. Workshop, Hamburg, Germany.
- Ferrand, M., Kassiotis, C., Mahmood, O., **Violeau, D.** (2011), *Comparison of the SPH and Finite Volume methods for simulating free-surface and confined flows*, Proc. 34th IAHR World Conf., Brisbane, Australia.
- Kassiotis, C., Rogers, B., Stansby, P., **Violeau, D.**, Benoit, M. (2011), *Un couplage fluide-fluide de type Boussinesq-SPH pour des calculs à proximité de structures hydroliennes*, Proc. 10th workshop "Colloque National en Calcul des Structures", Presqu'île de Giens, France.
- Ferrand, M., Laurence, D., Rogers, B., **Violeau, D.** (2010), *Improved time scheme integration approach for dealing with semi-analytical wall boundary conditions in Spartacus-2D*, Proc. 5th SPHERIC Int. Workshop, Manchester, UK.
- Joly, A., **Violeau, D.**, Minier, J.-P. (2010), *Modelling of the turbulent diffusion of algae in a coastal environment through a stochastic method with an exact integrator*, Proc. 1st IAHR Europ. Conf., Edinburgh, UK.
- Lee, E.-S., **Violeau, D.**, Issa, R., Ploix, S., Marc, R. (2009), *Simulating a real dam spillway flow with 3-D SPH*, Proc. 4th SPHERIC Int. Workshop, Nantes, France.
- **Violeau, D.**, Ferrand, M. (2009), *Deriving analytical damping functions from an explicit algebraic turbulent stress model for stratified flows*, Proc. 33rd IAHR World Conf., Vancouver, Canada.
- Lee, E.-S., **Violeau, D.**, Issa, R., Ploix, S., Thibault, G. (2009), *Modéliser les évacuateurs de crue avec la méthode numérique SPH*, Proc. SHF Colloquium "Dimensionnement et fonctionnement des évacuateurs de crue", Paris, France.
- Issa, R., Lee, E.S., **Violeau, D.**, Veyzollès, P., Biddiscombe, J., Thibaud, G., Ploix, S. (2008), *HPC for Smoothed Particle Hydrodynamics: applications to coastal and river flows*, Proc. ICCES Special Symp. on Meshless & Other Novel Comput. Meth., Suzhou, China.
- Issa, R., Moulinec, C., Latino, D., **Violeau, D.**, Biddiscombe, J., Thibaud, G. (2008), *HPC for Spartacus-3D SPH code and applications to industrial environmental flows*, Proc. 3rd SPHERIC Int. Workshop, Lausanne, Switzerland.
- **Violeau, D.**, Issa, R., Benhamadouche, S., Saleh, K., Chorda, J., Maubourguet, M.-M. (2008), *Modelling a fish passage with SPH and Eulerian codes: The influence of turbulent closure*, Proc. 3rd SPHERIC Int. Workshop, Lausanne, Switzerland.
- Issa, R., Decung, F., Razafindrakoto, E., Moulinec, C., Latino, D., Boiteau, O., **Violeau, D.** (2008), *HPC for hydraulics and industrial environmental flow*, Proc. 20th Int. Conf. on Parallel Comput. Fluid Dyn., Lyon, France.
- Lee, E.-S., Moulinec, C., **Violeau, D.**, Laurence, D., Stansby, P. (2007), *2-D flow past a bluff body in a closed channel*, Proc. 32th IAHR World Conf., Venice, Italy.
- **Violeau, D.**, Issa, R. (2007), *Influence of turbulence closure on free-surface flow modelling with SPH*, Proc. 32th IAHR World Conf., Venice, Italy.

- Boulet, T., **Violeau, D.** (2007), *Modelling the impact of climate change on extreme storm surges on French coasts*, Proc. 32nd IAHR World Conf., Venice, Italy.
- Lee, E.-S., **Violeau, D.**, Benoit, M., Issa, R., Laurence, D., Stansby, P. (2006), *Prediction of wave overtopping on coastal structures by using extended Boussinesq and SPH models*, Proc. 30th Int. Conf. on Coastal Engng., San Diego, USA.
- Buvat, C., **Violeau, D.** (2006), *Lagrangian numerical modelling of boom and oil spill motion for the management of coastal pollution risk*, Proc. 7th Int. Conf. on Hydroinformatics, Nice, France.
- **Violeau, D.**, Issa, R. (2005), *Modelling wave overtopping with Smoothed Particle Hydrodynamics*, Proc. 31st IAHR World Conf., Seoul, South Korea.
- Issa, R., **Violeau, D.**, Laurence, D. (2005), *A first attempt to adapt 3D Large Eddy Simulation to the Smoothed Particle Hydrodynamics gridless method*, Proc. Int. Conf. Comput. and Experimental Engng. and Sc., Stara-Lesna, Slovakia.
- **Violeau, D.** (2004), *One and two-equations turbulent closures for Smoothed Particle Hydrodynamics*, Proc. 6th Int. Conf. on Hydroinformatics, Singapore, Singapore.
- **Violeau, D.** (2003), *Theoretical estimation of wave runup on a breakwater*, Proc. 30th IAHR World Conf., Thessaloniki, Greece.
- Benoit, M., **Violeau, D.** (2002), *Progress in building a wave climate database along the French coasts through numerical hindcast simulation over a 20-years period*, Proc. 3rd Int. Conf. on EuroGOOS, Athens, Greece.
- **Violeau, D.**, Piccon, S., Chabard, J.-P. (2001), *Two attempts of Turbulence Modelling in Smoothed Particle Hydrodynamics*, Proc. 8th Int. Symp. on Flow Modeling and Turb. Meas., Tokyo, Japan.
- Cheviet, C., **Violeau, D.**, Guesmia, M. (2000), *Numerical simulation of cohesive sediment transport in the Loire estuary with a three-dimensional model including new parameterisations*, Proc. Int. Cohesive Sed. Dyn. Meetings, Delft, The Netherlands.
- **Violeau, D.**, Bourban, S., Cheviet, C., Markofsky, M., Petersen, O., Roberts, W., Spearman, J., Toorman, E., Vested, H.J., Weilbeer, H. (2000), *Numerical simulation of cohesive sediment transport: Intercomparison of several numerical models*, Proc. Int. Cohesive Sed. Dyn. Meetings, Delft, The Netherlands.
- Berlamont, J., Toorman, E., Dyer, K., Winterwerp, H., Roberts, B., **Violeau, D.**, Markofsky, M. (2000), *Prediction of cohesive Sediment transport and bed dynamics in estuaries and coastal zones with integrated numerical simulation models*, Proc. 7th Federal Interagency Sedimentation Conf., Reno, USA.
- **Violeau, D.**, Chauvelier-Alario, C., Foucart, A., Benoit, M. (2000), *Development of a Numerical Wave Flume Using Smoothed Particle Hydrodynamics*, Proc. 27th Int. Conf. Coastal Engng., Sydney, Australia.

• Bulletins and colloquiums without reviewing

- **Boyaval, S.**, **Violeau, D.** (2023), *Des données et des modèles en hydraulique pour gérer le risque d'inondation*, Transition, in French.
- **Violeau, D.** (2022), *Assessing the risk of cosmogenic tsunamis on French coasts*, Workshop for the 10th anniversary of the CENALT, Paris, France.
- Bilotta, G., **Violeau, D.** et al. (2019), *Getting more done in less time with GPUSPH version 5*, SPHERIC Newsletter, #29.

- Fonty, T., Ferrand, M., Leroy, A., Joly, A., **Violeau, D.** (2017), *An upwind scheme for conservative, realizable two-phase mixture SPH model with high density ratios*, SPHERIC Newsletter, #26.
- Carmigniani, R., Joly, A., Leroy, A., **Violeau, D.** (2017), *Waves above a submerged plate: Wave mass transport*, SPHERIC Newsletter, #24.
- Ghaïtanellis, A., **Violeau, D.**, Leroy, A., Joly, A. (2017), *Improved elastic-viscoplastic model for SPH simulations of bed-load transport*, SPHERIC Newsletter, #24.
- Leroy, A., **Violeau, D.**, Hérault, A., Dalrymple, R.A., Edge, B., Rustico, E., G. Bilotta (2017), *GPUSPH open-source version 4.0*, SPHERIC Newsletter, #23.
- Hébert *et al.* (2015), *Le projet TANDEM (Tsunamis en Atlantique et MaNche : Définition des Effets par Modélisation) (2014-2017) : enjeux pour les vulnérabilités littorales aux tsunamis*, Colloque de l'Association Française du Génie Parasismique, Marne-La-Vallée, France.
- Dombre, E., Harris, J., Benoit, M., Peyrard, C., **Violeau, D.**, Grilli, S.T. (2014), *Interactions vagues corps flottant avec la méthode des éléments de frontières appliquée à des grilles non-structurées*, 14e Journées de l'Hydrodynamique, Val-de-Rueil, France.
- Leroy, A., **Violeau, D.**, Joly, A., Ferrand, M. (2014), *Buoyancy modelling with incompressible SPH and the unified semi-analytical wall boundary conditions*, SPHERIC Newsletter, #18.
- Lafon, F. *et al.* (2013), *The flooding hazard. State of the art prior to the elaboration of the flooding guide for nuclear installations*, ASN Workshop, Montrouge, France.
- Mayrhofer, A., Laurence, D., Rogers, B.D., **Violeau, D.**, Ferrand, D. (2013), *Direct numerical simulation of 3-D turbulent wall bounded flows with SPH*, SPHERIC Newsletter, #16.
- Leroy, A., **Violeau, D.**, Kassiotis, C., Ferrand, M. (2013), *Application of the unified semi-analytical wall boundary conditions to 2-D incompressible SPH*, SPHERIC Newsletter, #16.
- Mayrhofer, A. Rogers, B.D., **Violeau, D.**, Ferrand, M. (2012), *Differential operators in the context of the semi-analytical wall boundary conditions*, SPHERIC Newsletter, #14.
- Ferrand, M., Laurence, D., Rogers, B.D., **Violeau, D.** (2010), *Improved time scheme integration approach for dealing with semi analytical wall boundary conditions in SPARTACUS2D*, SPHERIC Newsletter, #10.
- **Violeau, D.**, Issa, R., Buvat, C., Gariah, A. (2008), *Smoothed Particle Hydrodynamics for turbulence and applications to environmental flows*, Workshop des Graduiertenkollegs "Seehäfen für Containerschiffe zukünftiger Generationen", Hamburg, Germany.
- Colagrossi, A., Colicchio, G., Le Touzé, D., Lee, E.-S., Laurence, D., Stansby, P.K., **Violeau, D.**, Moulinec, C., Basa, M., Quinlan, N.J., Lastiwka, M. (2007), *Benchmark test case #6: Intercomparison of several models*, SPHERIC Newsletter, #4.
- Crespo, A.J.C., Gómez-Gesteira, M., Dalrymple, R.A., **Violeau, D.**, Issa, R. (2007), *Benchmark test case #5: Intercomparison of several models*, SPHERIC Newsletter, #4.
- Issa, R., Lee, E.-S., **Violeau, D.**, Gariah, A., Stansby, P.K., Laurence, D. (2007), *Wave interactions with coastal structures: quantitative predictions using SPH*, 2nd SPHERIC Int. Workshop, Madrid, Spain.
- Lee, E.-S., **Violeau, D.**, Laurence, D., Stansby, P., Moulinec, C. (2007), *SPH Benchmark test case 6: 2-D incompressible flow around a moving square inside a rectangular box*, 2nd SPHERIC Int. Workshop, Madrid, Spain.

- **Violeau, D.**, Issa, R. (2007), *SPHERIC benchmark test case number 5: Sensitivity analysis to numerical and physical parameters*, 2nd SPHERIC Int. Workshop, Madrid, Spain.
- Lee, E.-S., Laurence, D., Stansby, P.K., **Violeau, D.**, Moulinec, C. (2006), *2D flow past a square cylinder in a closed channel*, SPHERIC Newsletter, #3.
- Buvat, C., **Violeau, D.** (2006), *Modelling a boom and oil spill motion for the management of coastal pollution*, SPHERIC Newsletter, #3.
- Rogers, B., Lee, E.-S., **Violeau, D.**, Quinlan, N., Lastiwka, M., Basa, M. (2006), *Benchmark case 3: Lid-driven cavity flow*, SPHERIC Newsletter, #2.
- Abonneel, C., Achard, J.-L., Archer, A., Buvat, C., Guittet, L., Lenés, A., Maître, T., Maniati, M., Peyrard, C., Renaud, T., **Violeau, D.** (2005), *Some aspects of EDF modelling and testing activities, within its marine current energy research and development project "Hydroliennes en mer"*, CA-OE-WSI-EDF meeting, Aalborg, Denmark.
- Issa, R., **Violeau, D.**, Lee, E.-S. (2005), *Modelling laminar and turbulent flows*, SPHERIC Newsletter, #1.
- **Violeau, D.** (2005), *Hauteur d'ascension d'une vague sur une digue : approches théorique, expérimentale et numérique*, 5e Journées Scientifiques et Techniques du CETMEF, Paris, France.
- **Violeau, D.**, Issa, R. (2004), *Modelling turbulent free surface flows with Smoothed Particle Hydrodynamics*, ERCOFTAC Bulletin, #62.

• **Proceedings and journal special issues as editor**

- Khayyer, A., Shao, S., Durante, D., **Violeau, D.**, guest editors (2023), *in press*, Int. J. Mech. B/Fluids, Special issue.
- **Violeau, D.**, guest editor (2015), *SPH in Hydraulics*, Hydrolink, #3, special issue.
- **Violeau, D.**, Hérault, A., Joly, A., editors (2014), *Proc. 9th SPHERIC Int. Workshop*, Paris, France.
- **Violeau, D.**, Hervouet, J.-M., Razafindrakoto, E., Denis, C., editors (2011), *Proc. 18th Telemac-Mascaret User Club*, Chatou, France.
- Gomez-Gesteira, M., Rogers, B.D., **Violeau, D.**, Grassa, J.M., Crespo, A.J.C., guest editors (2010), *J. Hydr. Res.*, Vol. 48, special issue.
- **Violeau, D.**, guest editor (2008), *ERCOFTAC Bulletin*, #78, special issue.

• **Reviewing**

- **1 book and 1 book chapter**
- **Journals:** J. Fluid Mech., Phys. Fluids, J. Comput. Phys., Eur. J. Mech. B/Fluids, Comput. & Fluids, Int. J. Num. Meth. Fluids, Int. J. Num. Meth. Engng., J. Hydr. Engng., Coast. Engng. J., etc.