David Le Touz

List of Publications by Citations

79 papers	2,663 citations	27 h-index	51 g-index
91 ext. papers	3,327 ext. citations	3.3 avg, IF	5.64 L-index

#	Paper	IF	Citations
79	SPH model for simulating violent impact flows. *Computer Methods in Applied Mechanics and Engineering*, **2011**, 200, 1526-1542	5.7	375
78	An Hamiltonian interface SPH formulation for multi-fluid and free surface flows. *Journal of Computational Physics*, **2009**, 228, 8380-8393	4.1	233
77	Smoothed particle hydrodynamics method for fluid flows, towards industrial applications: Motivations, current state, and challenges. *Computers and Fluids*, **2016**, 136, 11-34	2.8	231
76	Fast free-surface detection and level-set function definition in SPH solvers. *Journal of Computational Physics*, **2010**, 229, 3652-3663	4.1	140
75	SPH accuracy improvement through the combination of a quasi-Lagrangian shifting transport velocity and consistent ALE formalisms. *Journal of Computational Physics*, **2016**, 313, 76-98	4.1	106
74	Theoretical considerations on the free-surface role in the smoothed-particle-hydrodynamics model. *Physical Review E*, **2009**, 79, 056701	2.4	105
73	An efficient FSI coupling strategy between Smoothed Particle Hydrodynamics and Finite Element methods. *Computer Physics Communications*, **2017**, 217, 66-81	4.2	82
72	Viscous bubbly flows simulation with an interface SPH model. *Ocean Engineering*, **2013**, 69, 88-102	3.9	80
71	Adaptive particle refinement and derefinement applied to the smoothed particle hydrodynamics method. *Journal of Computational Physics*, **2014**, 273, 640-657	4.1	77
70	A modified High-Order Spectral method for wavemaker modeling in a numerical wave tank. *European Journal of Mechanics, B/Fluids*, **2012**, 34, 19-34	2.4	74
69	HOS-ocean: Open-source solver for nonlinear waves in open ocean based on High-Order Spectral method. *Computer Physics Communications*, **2016**, 203, 245-254	4.2	69
68	3-D HOS simulations of extreme waves in open seas. *Natural Hazards and Earth System Sciences*, **2007**, 7, 109-122	3.9	65
67	Prediction of energy losses in water impacts using incompressible and weakly compressible models. *Journal of Fluids and Structures*, **2015**, 54, 802-822	3.1	62
66	Theoretical analysis and numerical verification of the consistency of viscous smoothed-particle-hydrodynamics formulations in simulating free-surface flows. *Physical Review E*, **2011**, 84, 026705	2.4	62
65	Analysis and improvements of Adaptive Particle Refinement (APR) through CPU time, accuracy and robustness considerations. *Journal of Computational Physics*, **2018**, 354, 552-575	4.1	60
64	Study of a complex fluid-structure dam-breaking benchmark problem using a multi-phase SPH method with APR. *Engineering Analysis With Boundary Elements*, **2019**, 104, 240-258	2.6	57
63	On distributed memory MPI-based parallelization of SPH codes in massive HPC context. *Computer Physics Communications*, **2016**, 200, 1-14	4.2	53

62	SPH simulation of green water and ship flooding scenarios. *Journal of Hydrodynamics*, **2010**, 22, 231-236	3.3	53
61	Coupling of Smoothed Particle Hydrodynamics with Finite Volume method for free-surface flows. *Journal of Computational Physics*, **2016**, 310, 161-180	4.1	42
60	Grand challenges for Smoothed Particle Hydrodynamics numerical schemes. *Computational Particle Mechanics*, **2021**, 8, 575-588	3	40
59	SPH high-performance computing simulations of rigid solids impacting the free-surface of water. *Journal of Hydraulic Research/De Recherches Hydrauliques*, **2010**, 48, 126-134	1.9	39
58	SPH modeling of shallow-water coastal flows. *Journal of Hydraulic Research/De Recherches Hydrauliques*, **2010**, 48, 118-125	1.9	37
57	The suction effect during freak wave slamming on a fixed platform deck: Smoothed particle hydrodynamics simulation and experimental study. *Physics of Fluids*, **2019**, 31, 117108	4.4	37
56	Fast and accurate SPH modelling of 3D complex wall boundaries in viscous and non viscous flows. *Computer Physics Communications*, **2019**, 234, 93-111	4.2	31
55	Non-linear time-domain models for irregular wave diffraction about offshore structures. *International Journal for Numerical Methods in Fluids*, **2003**, 43, 1257-1277	1.9	29
54	An accurate FSI-SPH modeling of challenging fluid-structure interaction problems in two and three dimensions. *Ocean Engineering*, **2021**, 221, 108552	3.9	29
53	A 3D SPH□E coupling for FSI problems and its application to tire hydroplaning simulations on rough ground. *Computer Methods in Applied Mechanics and Engineering*, **2019**, 355, 558-590	5.7	27
52	Particle Methods for Viscous Flows: Analogies and Differences Between the SPH and DVH Methods. *Communications in Computational Physics*, **2016**, 20, 660-688	2.4	23
51	Violent Fluid-Structure Interaction simulations using a coupled SPH/FEM method. *IOP Conference Series: Materials Science and Engineering*, **2010**, 10, 012041	0.4	22
50	A fully-spectral 3D time-domain model for second-order simulation of wavetank experiments. Part A: Formulation, implementation and numerical properties. *Applied Ocean Research*, **2006**, 28, 33-43	3.4	22
49	Extension of the □Plus-SPH model for simulating Vortex-Induced-Vibration problems. *Journal of Fluids and Structures*, **2019**, 90, 19-42	3.1	21
48	Detailed study on the extension of the □SPH model to multi-phase flow. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 368, 113189	5.7	21
47	Modeling of droplet collisions using Smoothed Particle Hydrodynamics. *International Journal of Multiphase Flow*, **2017**, 95, 175-187	3.6	20
46	Analysis of free-surface flows through energy considerations: Single-phase versus two-phase modeling. *Physical Review E*, **2016**, 93, 053113	2.4	20
45	Coupled SPH□V method with net vorticity and mass transfer. *Journal of Computational Physics*, **2018**, 364, 111-136	4.1	18

44	A fully-spectral 3D time-domain model for second-order simulation of wavetank experiments. Part B: Validation, calibration versus experiments and sample applications. *Applied Ocean Research*, **2006**, 28, 121-132	3.4	18
43	A Potential/RANSE Approach for Regular Water Wave Diffraction about 2-d Structures. *Ship Technology Research*, **2003**, 50, 165-171	1.6	18
42	High-speed water impacts of flat plates in different ditching configuration through a Riemann-ALE SPH model. *Journal of Hydrodynamics*, **2018**, 30, 38-48	3.3	14
41	On the coupling of a direct-forcing immersed boundary method and the regularized lattice Boltzmann method for fluid-structure interaction. *Computers and Fluids*, **2019**, 190, 470-484	2.8	14
40	A weakly-compressible Cartesian grid approach for hydrodynamic flows. *Computer Physics Communications*, **2017**, 220, 31-43	4.2	13
39	Conservation of circulation in SPH for 2D free-surface flows. *International Journal for Numerical Methods in Fluids*, **2013**, 72, 583-606	1.9	13
38	Multiple bifurcations of the flow over stalled airfoils when changing the Reynolds number. *Journal of Fluid Mechanics*, **2018**, 846, 356-391	3.7	12
37	An accurate SPH Volume Adaptive Scheme for modeling strongly-compressible multiphase flows. Part 2: Extension of the scheme to cylindrical coordinates and simulations of 3D axisymmetric problems with experimental validations. *Journal of Computational Physics*, **2021**, 426, 109936	4.1	11
36	A critical investigation of smoothed particle hydrodynamics applied to problems with free-surfaces. *International Journal for Numerical Methods in Fluids*, **2013**, 73, n/a-n/a	1.9	10
35	Comparison of wave modeling methods in CFD solvers for ocean engineering applications. *Ocean Engineering*, **2019**, 188, 106237	3.9	7
34	An accurate SPH Volume Adaptive Scheme for modeling strongly-compressible multiphase flows. Part 1: Numerical scheme and validations with basic 1D and 2D benchmarks. *Journal of Computational Physics*, **2021**, 426, 109937	4.1	6
33	Comparisons of weakly-compressible and truly incompressible approaches for viscous flow into a high-order Cartesian-grid finite volume framework. *Journal of Computational Physics: X*, **2019**, 1, 100015	1	5
32	Energy considerations in the SPH method with deformable boundaries and application to FSI problems. *Journal of Computational Physics: X*, **2019**, 1, 100008	1	5
31	Simulations of helicopter ditching using smoothed particle hydrodynamics. *Journal of Hydrodynamics*, **2020**, 32, 653-663	3.3	5
30	Extreme wave impacts on a wave energy converter: load prediction through a SPH model. *Coastal Engineering Journal*, **2019**, 61, 63-77	2.8	5
29	Spectral Wave Explicit Navier-Stokes Equations for wave-structure interactions using two-phase Computational Fluid Dynamics solvers. *Ocean Engineering*, **2021**, 221, 108513	3.9	5
28	A Coupled SPH-Spectral Method for the Simulation of Wave Train Impacts on a FPSO **2014**,		4
27	Publisher Note: Theoretical analysis and numerical verification of the consistency of viscous smoothed-particle-hydrodynamics formulations in simulating free-surface flows [Phys. Rev. E 84, 026705 (2011)]. *Physical Review E*, **2011**, 84,	2.4	4

26	On the energy conversion characteristics of a top-mounted pitching absorber by using smoothed particle hydrodynamics. *Energy Conversion and Management*, **2021**, 250, 114893	10.6	4
25	A regularized single-phase lattice Boltzmann method for free-surface flows. *Computers and Mathematics With Applications*, **2020**, 80, 2194-2211	2.7	4
24	In-vitro validation of 4D flow MRI measurements with an experimental pulsatile flow model. *Diagnostic and Interventional Imaging*, **2019**, 100, 17-23	5.4	4
23	SPHEV coupling algorithm for solving multi-scale three-dimensional free-surface flows. *Applied Ocean Research*, **2021**, 115, 102846	3.4	3
22	Smoothed Particle Hydrodynamics: Benchmarking on Selected Test Cases Within the NextMuSE Initiative **2013**,		2
21	SPH Multiphase Simulation of Bubbly Flows: Towards Oil and Water Separation **2013**,		2
20	Numerical Investigation on the Added Resistance and Seakeeping Performance of KVLCC2 with the SWENSE Method. *Journal of Ship Research*, **2020**, 1-18	0.9	2
19	An LDV based method to quantify the error of PC-MRI derived Wall Shear Stress measurement. *Scientific Reports*, **2021**, 11, 4112	4.9	2
18	A finite volume WENO scheme for immiscible inviscid two-phase flows. *Journal of Computational Physics*, **2020**, 418, 109601	4.1	1
17	Development of a 6-DOF Dynamic Velocity Prediction Program for offshore racing yachts. *Ocean Engineering*, **2020**, 212, 107668	3.9	1
16	CFD tools and adapted methodologies for Marine and Offshore Engineering projects **2015**,		1
15	Next-generation Multi-mechanics Simulation Engine in a Highly Interactive Environment. *Procedia Computer Science*, **2011**, 7, 292-293	1.6	1
14	Comparison of MPS and SPH methods for solving forced motion ship flooding problems. *Applied Ocean Research*, **2022**, 118, 103001	3.4	1
13	On Particle Shifting Techniques (PSTs): Analysis of existing laws and proposition of a convergent and multi-invariant law. *Journal of Computational Physics*, **2022**, 110999	4.1	1
12	A High-Order Finite Volume Solver on Locally Refined Cartesian MeshesBenchmark Session. *Springer Proceedings in Mathematics and Statistics*, **2017**, 73-89	0.2	1
11	Towards quantitative evaluation of wall shear stress from 4D flow imaging. *Magnetic Resonance Imaging*, **2020**, 74, 232-243	3.3	1
10	In-depth analysis of hydroplaning phenomenon accounting for tire wear on smooth ground. *Journal of Fluids and Structures*, **2022**, 111, 103555	3.1	1
9	Simulation of two in-line wind turbines using an incompressible Finite Volume solver coupled with a Blade Element Model. *Renewable Energy*, **2022**, 187, 81-93	8.1	0

8	C-CSF: Accurate, robust and efficient surface tension and contact angle models for single-phase flows using SPH. *Computer Methods in Applied Mechanics and Engineering*, **2021**, 389, 114292	5.7	0
7	Da Vinci's observation of turbulence: A French-Italian study aiming at numerically reproducing the physics behind one of his drawings, 500 years later. *Physics of Fluids*, **2021**, 33, 115122	4.4	0
6	A partitioned framework for coupling LBM and FEM through an implicit IBM allowing non-conforming time-steps: Application to fluid-structure interaction in biomechanics. *Journal of Computational Physics*, **2021**, 449, 110786	4.1	0
5	Efficiency of diagonally implicit Runge-Kutta time integration schemes in incompressible two-phase flow simulations. *Computer Physics Communications*, **2022**, 108415	4.2	0
4	Towards Numerical Simulation of Offshore Wind Turbines Using Anisotropic Mesh Adaptation. *Springer Tracts in Mechanical Engineering*, **2019**, 95-104	0.3	
3	Development of a Cartesian-grid finite-volume characteristic flux model for marine applications. *IOP Conference Series: Materials Science and Engineering*, **2010**, 10, 012028	0.4	
2	Experimental and Numerical Comparative Investigation of Pressure Fields Under Steep 2D Waves **2006**, 579		
1	A Nonlinear Spectral Model for Gravity Waves Generation and Propagation in a Bounded Domain **2003**, 523-528		