Olivier Simonin

List of Publications by Year
in descending order

76 papers	2,316 citations	257101 24 h-index	214527 47 g-index
77 all docs	77 docs citations	77 times ranked	1180 citing authors

#	Article	IF	Citations
1	Direct numerical simulation of turbulence modulation by particles in isotropic turbulence. Journal of Fluid Mechanics, 1998, 375, 235-263.	1.4	337
2	A functional subgrid drift velocity model for filtered drag prediction in dense fluidized bed. AICHE Journal, 2012, 58, 1084-1098.	1.8	194
3	Partitioning of particle velocities in gasâ€“solid turbulent flows into a continuous field and a spatially uncorrelated random distribution: theoretical formalism and numerical study. Journal of Fluid Mechanics, 2005, 533, .	1.4	190
4	On the prediction of gasâ€“solid flows with two-way coupling using large eddy simulation. Physics of Fluids, 2000, 12, 2080-2090.	1.6	157
5	Two statistical models for predicting collision rates of inertial particles in homogeneous isotropic turbulence. Physics of Fluids, 2003, 15, 2995.	1.6	112
6	Numerical study of the subgrid fluid turbulence effects on the statistics of heavy colliding particles. Physics of Fluids, 2006, 18, 045103.	1.6	110
7	Fluid dynamic numerical simulation of a gas phase polymerization reactor. International Journal for Numerical Methods in Fluids, 2003, 43, 1199-1220.	0.9	95
8	Sand-assisted fluidization of large cylindrical and spherical biomass particles: Experiments and simulation. Chemical Engineering Science, 2015, 126, 543-559.	1.9	66
9	Properties of the particle velocity field in gas-solid turbulent channel flow. Physics of Fluids, 2006, 18, 063302.	1.6	62
10	Hydrodynamic and solid residence time distribution in a circulating fluidized bed: Experimental and 3D computational study. Chemical Engineering and Processing: Process Intensification, 2008, 47, 463-473.	1.8	61
11	A Lagrangian VOF tensorial penalty method for the DNS of resolved particle-laden flows. Journal of Computational Physics, 2014, 256, 582-614.	1.9	57
12	3D numerical simulation of a lab-scale pressurized dense fluidized bed focussing on the effect of the particle-particle restitution coefficient and particleâ€“wall boundary conditions. Chemical Engineering Science, 2016, 142, 215-235.	1.9	49
13	Dynamics of bidisperse suspensions under Stokes flows: Linear shear flow and sedimentation. Physics of Fluids, 2006, 18, 121504.	1.6	45
14	On the spatial distribution of heavy-particle velocities in turbulent flow: from continuous field to particulate chaos. Journal of Turbulence, 2002, 3, N40.	0.5	43
15	Large eddy simulation of turbulent gas-solid flows in a vertical channel and evaluation of second-order models. International Journal of Heat and Fluid Flow, 1998, 19, 505-511.	1.1	42
16	Collision rates of bidisperse inertial particles in isotropic turbulence. Physics of Fluids, 2006, 18, 035110.	1.6	39
17	Development of Gas-Particle Euler-Euler LES Approach: A Priori Analysis of Particle Sub-Grid Models in Homogeneous Isotropic Turbulence. Flow, Turbulence and Combustion, 2010, 84, 295-324.	1.4	38
18	Direct numerical simulations of heat transfer by solid particles suspended in homogeneous isotropic turbulence. International Journal of Heat and Fluid Flow, 1998, 19, 187-192.	1.1	32

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19	Transition boiling at jet impingement. International Journal of Heat and Mass Transfer, 2004, 47, 5059-5070.	2.5	31
20	LESâ€“DPS of the effect of wall roughness on dispersed-phase transport in particle-laden turbulent channel flow. International Journal of Heat and Fluid Flow, 2006, 27, 619-626.	1.1	31
21	Unsteady three-dimensional theoretical model and numerical simulation of a 120-kW chemical looping combustion pilot plant. Chemical Engineering Science, 2019, 193, 102-119.	1.9	29
22	Massively parallel numerical simulation using up to 36,000 CPU cores of an industrial-scale polydispersed reactive pressurized fluidized bed with a mesh of one billion cells. Powder Technology, 2020, 366, 906-924.	2.1	29
23	Turbulent collision rates of arbitrary-density particles. International Journal of Heat and Mass Transfer, 2010, 53, 1613-1620.	2.5	26
24	kâ€“Îµ Macro-scale modeling of turbulence based on a two scale analysis in porous media. International Journal of Heat and Fluid Flow, 2006, 27, 955-966.	1.1	24
25	Connection between two statistical approaches for the modelling of particle velocity and concentration distributions in turbulent flow: The mesoscopic Eulerian formalism and the two-point probability density function method. Physics of Fluids, 2006, 18, 125107.	1.6	24
26	Dense gas-particle suspension upward flow used as heat transfer fluid in solar receiver: PEPT experiments and 3D numerical simulations. Powder Technology, 2017, 307, 25-36.	2.1	24
27	Improved CFD transport and boundary conditions models for low-inertia particles. Computers and Fluids, 2011, 40, 79-91.	1.3	23
28	The Mesoscopic Eulerian Approach for Evaporating Droplets Interacting with Turbulent Flows. Flow, Turbulence and Combustion, 2011, 86, 563-583.	1.4	22
29	Monte-Carlo simulation of colliding particles or coalescing droplets transported by a turbulent flow in the framework of a joint fluidâ€“particle pdf approach. International Journal of Multiphase Flow, 2015, 74, 165-183.	1.6	21
30	Threeâ€dimensional numerical simulation of upflow bubbling fluidized bed in opaque tube under high flux solar heating. AICHE Journal, 2018, 64, 3857-3867.	1.8	21
31	DROPLET SIZE AND VELOCITY MEASUREMENTS AT THE OUTLET OF A HOLLOW CONE SPRAY NOZZLE. Atomization and Sprays, 2011, 21, 893-905.	0.3	19
32	A hybrid Eulerianâ€“Lagrangian method to simulate the dispersed phase in turbulent gas-particle flows. International Journal of Multiphase Flow, 2007, 33, 766-788.	1.6	16
33	Particle-resolved numerical simulations of the gasâ€“solid heat transfer in arrays of random motionless particles. Acta Mechanica, 2019, 230, 541-567.	1.1	16
34	A massively parallel CFD/DEM approach for reactive gas-solid flows in complex geometries using unstructured meshes. Computers and Fluids, 2020, 198, 104402.	1.3	16
35	Stochastic modelling of three-dimensional particle rebound from isotropic rough wall surface. International Journal of Multiphase Flow, 2018, 109, 35-50.	1.6	15
36	Experiments support simulations by the NEPTUNE_CFD code in an Upflow Bubbling Fluidized Bed reactor. Chemical Engineering Journal, 2020, 385, 123568.	6.6	13

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37	Three-dimensional DEM-CFD simulation of a lab-scale fluidized bed to support the development of two-fluid model approach. International Journal of Multiphase Flow, 2022, 156, 104189.	1.6	13
38	Detached eddy simulations and particle Lagrangian tracking of horizontal rough wall turbulent channel flow. Journal of Turbulence, 2011, 12, N22.	0.5	12
39	Numerical study of solidâ€“liquid fluidization dynamics. AICHE Journal, 2010, 56, 2781-2794.	1.8	10
40	Lattice Boltzmann model for predicting the deposition of inertial particles transported by a turbulent flow. International Journal of Multiphase Flow, 2015, 76, 187-197.	1.6	10
41	Shear-induced self-diffusion of inertial particles in a viscous fluid. Physical Review E, 2009, 79, 036313.	0.8	9
42	Development and Validation of a Binary Collision Detection Algorithm for a Polydispersed Particle Mixture. , 2008, , .		8
43	Flow of particles suspended in a sheared viscous fluid: Effects of finite inertia and inelastic collisions. AICHE Journal, 2010, 56, 2523-2538.	1.8	8
44	Algebraic-Closure-Based Moment Method for Unsteady Eulerian Simulations of Non-Isothermal Particle-Laden Turbulent Flows at Moderate Stokes Numbers in Dilute Regime. Flow, Turbulence and Combustion, 2014, 92, 121-145.	1.4	8
45	Numerical Simulations of Short- and Long-Range Interaction Forces in Turbulent Particle-Laden Gas Flows. Flow, Turbulence and Combustion, 2020, 105, 989-1015.	1.4	8
46	Modelling of the mean electric charge transport equation in a mono-dispersed gasâ€“particle flow. Journal of Fluid Mechanics, 2020, 902, .	1.4	7
47	Monte Carlo Simulation of Colliding Particles in Gas-Solid Turbulent Flows From a Joint Fluid-Particle PDF Equation. , 2002, , 431.		6
48	Macroscale turbulence modeling for flows in media laden with solid structures. Comptes Rendus - Mecanique, 2007, 335, 13-19.	2.1	6
49	Numerical Study and Lagrangian Modelling of Turbulent Heat Transport. Flow, Turbulence and Combustion, 2008, 80, 37-46.	1.4	6
50	Direct Simulation Monte-Carlo predictions of coarse elastic particle statistics in fully developed turbulent channel flows: Comparison with deterministic discrete particle simulation results and moment closure assumptions. International Journal of Multiphase Flow, 2018, 108, 25-41.	1.6	6
51	Numerical Simulation of Multiphase Reactive Flows. Advances in Chemical Engineering, 2018, 52, 51-124.	0.5	6
52	Gas-solid fluidized bed simulations using the filtered approach: Validation against pilot-scale experiments. Chemical Engineering Science, 2020, 217, 115472.	1.9	6
53	Monte Carlo Simulation of Colliding Particles Suspended in Gas-Solid Homogeneous Turbulent Shear Flows. , 2003, , .		6
54	Application of a Perturbated Two-Maxwellian Approach for the Modelling of Kinetic Stress Transfer by Collision in Non-Equilibrium Binary Mixture of Inelastic Particles. , 2005, , 581.		5

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55	Construction of numerical potential fields with reactive agents. , 2005, , .		5
56	Effect of electrostatic forces on the dispersion of like-charged solid particles transported by homogeneous isotropic turbulence. Journal of Fluid Mechanics, 2022, 938, .	1.4	5
57	Continuum Modeling of the Dispersed Phase in Solid Rocket Motors. , 2005, , .		4
58	Simulation of the flow past random arrays of spherical particles: Microstructure-based tensor quantities as a tool to predict fluidâ€“particle forces. International Journal of Multiphase Flow, 2022, 149, 103970.	1.6	4
59	Three-dimensional unsteady numerical simulation of a 150ÂkW full-loop chemical looping combustion pilot with biomass as fuel: A hydrodynamic investigation. Chemical Engineering Science, 2022, 260, 117835.	1.9	4
60	A Simplified Particle-Turbulence Interaction PDF Model: Application to Deposition Modelling in Turbulent Boundary Layer. , 2009, , .		3
61	Modelling of three-dimensional particle rebound from an anisotropic rough wall. Powder Technology, 2021, 393, 165-183.	2.1	3
62	Euler-Euler Large-Eddy Simulation Approach for Non Isothermal Particle-Laden Turbulent Jet. , 2008, , .		3
63	Eulerian modelling of the powder discharge of a silo: Attempting to shed some light on the origin of jet expansion. Powder Technology, 2021, 379, 49-57.	2.1	2
64	Direct Numerical Simulation of the Motion of Particles Larger Than the Kolmogorov Scale in a Homogeneous Isotropic Turbulence. , 2008, , .		2
65	A Lagrangian Stochastic Model for Droplet Deposition Simulations in Connection With Wall Function Approaches. , 2009, , .		1
66	Simulation of a Fluidized Bed Using a Hybrid Eulerian-Lagrangian Method for Particle Tracking. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 103-110.	0.2	1
67	Modeling of Particulate Pressure in the Frame of Eulerian Approach for Compressible Reactive Dispersed Two-Phase Flows. , 2005, , .		1
68	Quadrature Method of Moments for the PDF Modeling of Droplet Coalescence in Turbulent Two-Phase Flows. , 2009, , .		1
69	DNS/DPS of Inertial Droplet Coalescence in Homogeneous Isotropic Turbulence and Comparison With PDF Model Predictions Using the Direct Quadrature Method of Moments. , 2009, , .		0
70	Comparison Between Gradâ€™s and Quadrature-Based Methods of Moments for the Numerical Simulation of Unsteady Particle-Laden Flows. , 2009, , .		0
71	Modeling heat transfer in gas-particle mixtures: Calculation of the macro-scale heat exchange in Eulerianâ€“Lagrangian approaches using spatial averaging. International Journal of Multiphase Flow, 2019, 117, 64-80.	1.6	0
72	Soft-Sphere DEM Simulation of Coarse Particles Transported by a Fully Developed Turbulent Gas Vertical Channel Flow. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2021, , 150-160.	0.2	0

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73	Kinetic Modeling and Monte-Carlo Simulations of Droplet Coalescence in a Turbulent Gas Flow. , 2002, , .		0
74	Numerical Simulation and Statistical Modeling of Inertial Droplet Coalescence in Homogeneous Isotropic Turbulence. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 401-407.	0.2	0
75	TRANSIENT THREE DIMENSIONAL SIMULATION OF ELECTRIC ARC. High Temperature Material Processes, 1998, 2, 129-142.	0.2	0
76	On Fluid-Particle and Particle-Particle Interactons in Gas-Solid Turbulent Channel Flow. , 2006, , 11-20.		0