Ivan C Christov

List of Publications by Citations

97 papers	1,968 citations	22 h-index	42 g-index
111 ext. papers	2,373 ext. citations	2.8 avg, IF	5.8 L-index

#	Paper	IF	Citations
97	On frame indifferent formulation of the Maxwell–Cattaneo model of finite-speed heat conduction. *Mechanics Research Communications*, **2009**, 36, 481-486	2.2	639
96	Dissipative solitons. *Physica D: Nonlinear Phenomena*, **1995**, 86, 323-347	3.3	120
95	An energy-consistent dispersive shallow-water model. *Wave Motion*, **2001**, 34, 161-174	1.8	57
94	Kink-Kink and Kink-Antikink Interactions with Long-Range Tails. *Physical Review Letters*, **2019**, 122, 171601	7.4	49
93	Successive phase transitions and kink solutions in ?(8), ?(10), and ?(12) field theories. *Physical Review E*, **2014**, 90, 023208	2.4	49
92	Two-phase fluid displacement and interfacial instabilities under elastic membranes. *Physical Review Letters*, **2013**, 111, 034502	7.4	45
91	Long-range interactions of kinks. *Physical Review D*, **2019**, 99,	4.9	45
90	Flow rate–pressure drop relation for deformable shallow microfluidic channels. *Journal of Fluid Mechanics*, **2018**, 841, 267-286	3.7	43
89	Modeling weakly nonlinear acoustic wave propagation. *Quarterly Journal of Mechanics and Applied Mathematics*, **2007**, 60, 473-495	1	41
88	Flow regimes for fluid injection into a confined porous medium. *Journal of Fluid Mechanics*, **2015**, 767, 881-909	3.7	39
87	New non-oscillatory central schemes on unstructured triangulations for hyperbolic systems of conservation laws. *Journal of Computational Physics*, **2008**, 227, 5736-5757	4.1	39
86	INELASTIC INTERACTION OF BOUSSINESQ SOLITONS. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **1994**, 04, 1095-1112	2	36
85	Physical dynamics of quasi-particles in nonlinear wave equations. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2008**, 372, 841-848	2.3	35
84	Parameters and scalings for dry and immersed granular flowing layers in rotating tumblers. *Physical Review E*, **2012**, 86, 011304	2.4	31
83	Stokes' first problem for some non-Newtonian fluids: Results and mistakes. *Mechanics Research Communications*, **2010**, 37, 717-723	2.2	30
82	Nonlinear acoustic propagation in homentropic perfect gases: A numerical study. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2006**, 353, 273-280	2.3	30
81	Kink dynamics in a parametric ?6 system: a model with controllably many internal modes. *Journal of High Energy Physics*, **2017**, 2017, 1	5.4	28

80	A simple finite difference scheme for modeling the finite-time blow-up of acoustic acceleration waves. *Journal of Sound and Vibration*, **2005**, 281, 1207-1216	3.9	28
79	Influence of heterogeneity on second-kind self-similar solutions for viscous gravity currents. *Journal of Fluid Mechanics*, **2014**, 747, 218-246	3.7	26
78	From streamline jumping to strange eigenmodes: Bridging the Lagrangian and Eulerian pictures of the kinematics of mixing in granular flows. *Physics of Fluids*, **2011**, 23, 103302	4.4	23
77	Resolving a paradox of anomalous scalings in the diffusion of granular materials. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 16012-7	11.5	22
76	Non-Newtonian fluid–structure interactions: Static response of a microchannel due to internal flow of a power-law fluid. *Journal of Non-Newtonian Fluid Mechanics*, **2019**, 264, 62-72	2.7	22
75	On the Propagation of Second-Sound in Nonlinear Media: Shock, Acceleration and Traveling Wave Results. *Journal of Thermal Stresses*, **2010**, 33, 1109-1135	2.2	21
74	Streamline jumping: a mixing mechanism. *Physical Review E*, **2010**, 81, 046307	2.4	20
73	Mixing by cutting and shuffling 3D granular flow in spherical tumblers. *Chemical Engineering Science*, **2012**, 73, 195-207	4.4	19
72	Chaotic mixing via streamline jumping in quasi-two-dimensional tumbled granular flows. *Chaos*, **2010**, 20, 023102	3.3	19
71	A mapping method for distributive mixing with diffusion: Interplay between chaos and diffusion in time-periodic sine flow. *Physics of Fluids*, **2013**, 25, 052102	4.4	18
70	Topological defects with power-law tails. *Journal of Physics: Conference Series*, **2017**, 798, 012087	0.3	18
69	A Study in Three-Dimensional Chaotic Dynamics: Granular Flow and Transport in a Bi-Axial Spherical Tumbler. *SIAM Journal on Applied Dynamical Systems*, **2014**, 13, 901-943	2.8	16
68	Stretching and folding versus cutting and shuffling: An illustrated perspective on mixing and deformations of continua. *American Journal of Physics*, **2011**, 79, 359-367	0.7	16
67	Frame indifferent formulation of Maxwell–elastic-fluid model and the rational continuum mechanics of the electromagnetic field. *Mechanics Research Communications*, **2011**, 38, 334-339	2.2	16
66	Internal solitary waves in the ocean: Analysis using the periodic, inverse scattering transform. *Mathematics and Computers in Simulation*, **2009**, 80, 192-201	3.3	15
65	CUTTING AND SHUFFLING A LINE SEGMENT: MIXING BY INTERVAL EXCHANGE TRANSFORMATIONS. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2012**, 22, 1230041	2	15
64	Kink-antikink collisions and multi-bounce resonance windows in higher-order field theories. *Communications in Nonlinear Science and Numerical Simulation*, **2021**, 97, 105748	3.7	15
63	Acoustic traveling waves in thermoviscous perfect gases: Kinks, acceleration waves, and shocks under the Taylor–Lighthill balance. *Mathematics and Computers in Simulation*, **2016**, 127, 2-18	3.3	14

62	Shear dispersion in dense granular flows. *Granular Matter*, **2014**, 16, 509-515	2.6	13
61	Comment on On a class of exact solutions of the equations of motion of a second grade fluid by C. Fetecu and J. Zierep (Acta Mech. 150, 135138, 2001). *Acta Mechanica*, **2010**, 215, 25-28	2.1	13
60	Interacting localized waves for the regularized long wave equation via a Galerkin spectral method. *Mathematics and Computers in Simulation*, **2005**, 69, 257-268	3.3	13
59	Dissipative acoustic solitons under a weakly-nonlinear, Lagrangian-averaged Euler- model of single-phase lossless fluids. *Wave Motion*, **2011**, 48, 782-790	1.8	10
58	Revisiting steady viscous flow of a generalized Newtonian fluid through a slender elastic tube using shell theory. *ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik*, **2021**, 101, e201900309	1	10
57	Stress retardation versus stress relaxation in linear viscoelasticity. *Mechanics Research Communications*, **2016**, 72, 59-63	2.2	9
56	A two-fluid model for numerical simulation of shear-dominated suspension flows. *International Journal of Multiphase Flow*, **2019**, 120, 103079	3.6	9
55	Hidden solitons in the ZabuskyKruskal experiment: Analysis using the periodic, inverse scattering transform. *Mathematics and Computers in Simulation*, **2012**, 82, 1069-1078	3.3	9
54	Perturbation solution for the 2D Boussinesq equation. *Mechanics Research Communications*, **2011**, 38, 274-281	2.2	9
53	On the evolution of localized wave packets governed by a dissipative wave equation. *Wave Motion*, **2008**, 45, 154-161	1.8	9
52	Collision dynamics of elliptically polarized solitons in Coupled Nonlinear Schrdinger Equations. *Mathematics and Computers in Simulation*, **2012**, 82, 1321-1332	3.3	8
51	Shock bifurcation and emergence of diffusive solitons in a nonlinear wave equation with relaxation. *New Journal of Physics*, **2008**, 10, 043027	2.9	8
50	Theory of the flow-induced deformation of shallow compliant microchannels with thick walls. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2019**, 475, 20190513	2.4	8
49	Static response of deformable microchannels: a comparative modelling study. *Journal of Physics Condensed Matter*, **2018**, 30, 054002	1.8	8
48	Shock and traveling wave phenomena on an externally damped, non-linear string. *International Journal of Non-Linear Mechanics*, **2009**, 44, 511-519	2.8	7
47	On the nonlinear continuum mechanics of space and the notion of luminiferous medium. *Nonlinear Analysis: Theory, Methods & Applications*, **2009**, 71, e2028-e2044	1.3	7
46	Transient compressible flow in a compliant viscoelastic tube. *Physics of Fluids*, **2020**, 32, 112014	4.4	7
45	Corrigendum and addendum: modeling weakly nonlinear acoustic wave propagation. *Quarterly Journal of Mechanics and Applied Mathematics*, **2015**, 68, 231-233	1	6

44	On mechanical waves and Doppler shifts from moving boundaries. *Mathematical Methods in the Applied Sciences*, **2017**, 40, 4481-4492	2.3	6
43	Comments on: Starting solutions for some unsteady unidirectional flows of a second grade fluid [Int. J. Eng. Sci. 43 (2005) 781]. *International Journal of Engineering Science*, **2012**, 51, 326-332	5.7	6
42	On a difficulty in the formulation of initial and boundary conditions for eigenfunction expansion solutions for the start-up of fluid flow. *Mechanics Research Communications*, **2013**, 51, 86-92	2.2	6
41	The concept of a quasi-particle and the non-probabilistic interpretation of wave mechanics. *Mathematics and Computers in Simulation*, **2009**, 80, 91-101	3.3	6
40	Time-averaged transport in oscillatory squeeze flow of a viscoelastic fluid. *Physical Review Fluids*, **2020**, 5,	2.8	6
39	Nonlinear acoustics and shock formation in lossless barotropic Green--Naghdi fluids. *Evolution Equations and Control Theory*, **2016**, 5, 349-365	2	6
38	Computational Analysis of Interfacial Dynamics in Angled Hele-Shaw Cells: Instability Regimes. *Transport in Porous Media*, **2020**, 131, 907-934	3.1	6
37	Unsteady fluid-structure interactions in a soft-walled microchannel: A one-dimensional lubrication model for finite Reynolds number. *Physical Review Fluids*, **2020**, 5,	2.8	5
36	On an instability exhibited by the ballistic-diffusive heat conduction model of Xu and Hu. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2014**, 470, 20130557	2.4	4
35	Comments on: Energetic balance for the Rayleigh–Stokes problem of an Oldroyd-B fluid [Nonlinear Anal. RWA 12 (2011) 1]. *Nonlinear Analysis: Real World Applications*, **2011**, 12, 3687-3690	2.1	4
34	Tuning a magnetic field to generate spinning ferrofluid droplets with controllable speed via nonlinear periodic interfacial waves. *Physical Review E*, **2021**, 103, 013103	2.4	4
33	Acoustic shock and acceleration waves in selected inhomogeneous fluids. *Mechanics Research Communications*, **2018**, 93, 80-88	2.2	4
32	On the Deformation of a Hyperelastic Tube Due to Steady Viscous Flow Within. *Advanced Structured Materials*, **2019**, 17-35	0.6	3
31	Hydrodynamic Bulge Testing: Materials Characterization Without Measuring Deformation. *Journal of Applied Mechanics, Transactions ASME*, **2020**, 87,	2.7	3
30	Flow and fouling in elastic membrane filters with hierarchical branching pore morphology. *Physics of Fluids*, **2021**, 33, 062009	4.4	3
29	On the Enhancement of Heat Transfer and Reduction of Entropy Generation by Asymmetric Slip in Pressure-Driven Non-Newtonian Microflows. *Journal of Heat Transfer*, **2019**, 141,	1.8	3
28	Cutting and shuffling with diffusion: Evidence for cut-offs in interval exchange maps. *Physical Review E*, **2018**, 98, 022221	2.4	3
27	Comment on "Locomotion of a microorganism in weakly viscoelastic liquids". *Physical Review E*, **2016**, 94, 057101	2.4	2

26	Nonlinear waves in electromigration dispersion in a capillary. *Wave Motion*, **2017**, 71, 42-52	1.8	2
25	On a hierarchy of nonlinearly dispersive generalized Korteg - de Vries evolution equations. *Proceedings of the Estonian Academy of Sciences*, **2015**, 64, 212	1.6	2
24	Soft hydraulics: from Newtonian to complex fluid flows through compliant conduits. *Journal of Physics Condensed Matter*, **2021**, 34,	1.8	2
23	Reduced models of unidirectional flows in compliant rectangular ducts at finite Reynolds number. *Physics of Fluids*, **2021**, 33, 102004	4.4	2
22	Higher-Order Field Theories: (phi ^6), (phi ^8) and Beyond. *Advances in Dynamics, Patterns, Cognition*, **2019**, 253-279	0.7	2
21	Diffusion of ellipsoidal granular particles in shear flow. *AICHE Journal*, **2021**, 67, e17109	3.6	2
20	Profiling a soft solid layer to passively control the conduit shape in a compliant microchannel during flow. *Physical Review E*, **2021**, 104, 015108	2.4	2
19	On the pseudolocalized solutions in multi-dimension of Boussinesq equation. *Mathematics and Computers in Simulation*, **2016**, 127, 19-27	3.3	1
18	Corrections to Morse and Ingard's variational-based treatment of weakly-nonlinear acoustics in lossless gases. *Journal of the Acoustical Society of America*, **2015**, 138, 361-2	2.2	1
17	Challenges in Modeling Hemodynamics in Cerebral Aneurysms Related to Arteriovenous Malformations.. *Cardiovascular Engineering and Technology*, **2022**, 1	2.2	1
16	Soft hydraulics in channels with thick walls: The finite-Reynolds-number base state and its stability **2020**,		1
15	Cell spinpods are a simple inexpensive suspension culture device to deliver fluid shear stress to renal proximal tubular cells. *Scientific Reports*, **2021**, 11, 21296	4.9	1
14	Long-time asymptotics of non-degenerate non-linear diffusion equations. *Journal of Mathematical Physics*, **2020**, 61, 081505	1.2	1
13	Introduction: energy and the subsurface. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2016**, 374,	3	1
12	Shape of spreading and leveling gravity currents in a Hele-Shaw cell with flow-wise width variation. *Physical Review Fluids*, **2021**, 6,	2.8	1
11	Long-wave equation for a confined ferrofluid interface: periodic interfacial waves as dissipative solitons. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477,	2.4	1
10	Pseudolocalized three-dimensional solitary waves as quasi-particles. *Wave Motion*, **2017**, 71, 25-41	1.8	0
9	Two-fluid modeling of heat transfer in flows of dense suspensions. *International Journal of Heat and Mass Transfer*, **2022**, 183, 122068	4.9	0

8	Solving Nonlinear Parabolic Equations by a Strongly Implicit Finite Difference Scheme. *Mathematics of Planet Earth*, **2019**, 305-342	0.4	0
7	Peakompactons: Peaked compact nonlinear waves. *International Journal of Modern Physics B*, **2017**, 31, 1742008	1.1	
6	Comment on "The velocity field due to an oscillating plate in an Oldroyd-B fluid" by C.C. Hopkins and J.R. de Bruyn [Can. J. Phys. 92, 533 (2014)]. *Canadian Journal of Physics*, **2015**, 93, 1651-1652	1.1	
5	An improved formula for the frequency shift due to a variable phase speed. *Journal of Physics A: Mathematical and Theoretical*, **2011**, 44, 112001	2	
4	Fourier, Scattering, and Wavelet Transforms: Applications to Internal Gravity Waves with Comparisons to Linear Tidal Data. *Lecture Notes in Earth Sciences*, **2008**, 223-244		
3	A Parametric Study of Mixing in a Granular Flow a Biaxial Spherical Tumbler. *Springer Proceedings in Mathematics and Statistics*, **2016**, 143-154	0.2	
2	Comment on: "Stokes' first problem for heated flat plate with Atangana-Baleanu fractional derivative" [Chaos Solitons Fractals 117 (2018) 68]. *Chaos, Solitons and Fractals*, **2021**, 147, 110999	9.3	
1	The hydraulic conductivity of a shaped fracture with permeable walls. *Mechanics Research Communications*, **2021**, 111, 103650	2.2	