

Francesco Califano

List of Publications by Year in descending order

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82
papers

2,547
citations

172457

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all docs

89
docs citations

89
times ranked

1500
citing authors

#	ARTICLE	IF	CITATIONS
1	A hybrid-Vlasov model based on the current advance method for the simulation of collisionless magnetized plasma. <i>Journal of Computational Physics</i> , 2007, 225, 753-770.	3.8	167
2	Local Kinetic Effects in Two-Dimensional Plasma Turbulence. <i>Physical Review Letters</i> , 2012, 108, 045001.	7.8	159
3	A Numerical Scheme for the Integration of the Vlasov-Maxwell System of Equations. <i>Journal of Computational Physics</i> , 2002, 179, 495-538.	3.8	147
4	A kinetic model of plasma turbulence. <i>Journal of Plasma Physics</i> , 2015, 81, .	2.1	136
5	Magnetic Reconnection as a Driver for a Sub-ion-scale Cascade in Plasma Turbulence. <i>Astrophysical Journal Letters</i> , 2017, 850, L16.	8.3	92
6	Reconnection and small-scale fields in 2D-3V hybrid-kinetic driven turbulence simulations. <i>New Journal of Physics</i> , 2017, 19, 025007.	2.9	82
7	PROTON KINETIC EFFECTS IN VLASOV AND SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2014, 781, L27.	8.3	80
8	Investigating Mercury's Environment with the Two-Spacecraft BepiColombo Mission. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	71
9	Kinetic Cascade in Solar-wind Turbulence: 3D3V Hybrid-kinetic Simulations with Electron Inertia. <i>Astrophysical Journal Letters</i> , 2017, 846, L18.	8.3	66
10	SUBPROTON-SCALE CASCADES IN SOLAR WIND TURBULENCE: DRIVEN HYBRID-KINETIC SIMULATIONS. <i>Astrophysical Journal Letters</i> , 2016, 822, L12.	8.3	61
11	Fully Kinetic versus Reduced-kinetic Modeling of Collisionless Plasma Turbulence. <i>Astrophysical Journal</i> , 2017, 847, 28.	4.5	60
12	Pressure anisotropy and small spatial scales induced by velocity shear. <i>Physical Review E</i> , 2016, 93, 053203.	2.1	58
13	Dual Phase-space Cascades in 3D Hybrid-Vlasov-Maxwell Turbulence. <i>Astrophysical Journal Letters</i> , 2018, 856, L13.	8.3	58
14	Nonlinear mirror mode dynamics: Simulations and modeling. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	57
15	Hybrid Vlasov-Maxwell simulations of two-dimensional turbulence in plasmas. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	55
16	Competing Mechanisms of Plasma Transport in Inhomogeneous Configurations with Velocity Shear: The Solar-Wind Interaction with Earth's Magnetosphere. <i>Physical Review Letters</i> , 2008, 100, 015001.	7.8	54
17	Two-Dimensional Kinetic Turbulence in the Solar Wind. <i>Physical Review Letters</i> , 2010, 104, 205002.	7.8	53
18	Three-Dimensional Magnetic Structures Generated by the Development of the Filamentation (Weibel) Instability in the Relativistic Regime. <i>Physical Review Letters</i> , 2006, 96, 105008.	7.8	50

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19	Aspects of three-dimensional magnetic reconnection. <i>Physics of Plasmas</i> , 2005, 12, 032309.	1.9	49
20	Magnetized Kelvin-Helmholtz instability: theory and simulations in the Earth's magnetosphere context. <i>Journal of Plasma Physics</i> , 2017, 83, .	2.1	49
21	Nonlinear evolution of the magnetized Kelvin-Helmholtz instability: From fluid to kinetic modeling. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	48
22	Magnetic reconnection and Kelvin-Helmholtz instabilities at the Earth's magnetopause. <i>Plasma Physics and Controlled Fusion</i> , 2012, 54, 124037.	2.1	44
23	Turbulent dynamo in a collisionless plasma. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 3950-3953.	7.1	43
24	Coherent Structures and Spectral Energy Transfer in Turbulent Plasma: A Space-Filter Approach. <i>Physical Review Letters</i> , 2018, 120, 125101.	7.8	41
25	Numerical Evidence of Undriven, Fast Reconnection in the Solar-Wind Interaction with Earth's Magnetosphere: Formation of Electromagnetic Coherent Structures. <i>Physical Review Letters</i> , 2008, 101, 105001.	7.8	35
26	Nonlinear kinetic development of the Weibel instability and the generation of electrostatic coherent structures. <i>Plasma Physics and Controlled Fusion</i> , 2009, 51, 125006.	2.1	34
27	Plasma turbulence at ion scales: a comparison between particle in cell and Eulerian hybrid-kinetic approaches. <i>Journal of Plasma Physics</i> , 2017, 83, .	2.1	34
28	Being on time in magnetic reconnection. <i>New Journal of Physics</i> , 2009, 11, 063008.	2.9	31
29	Extended fluid models: Pressure tensor effects and equilibria. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	29
30	ELECTRON PARALLEL COMPRESSIBILITY IN THE NONLINEAR DEVELOPMENT OF TWO-DIMENSIONAL COLLISIONLESS MAGNETOHYDRODYNAMIC RECONNECTION. <i>Modern Physics Letters B</i> , 2006, 20, 931-961.	1.9	28
31	Double mid-latitude dynamical reconnection at the magnetopause: An efficient mechanism allowing solar wind to enter the Earth's magnetosphere. <i>Europhysics Letters</i> , 2012, 100, 69001.	2.0	27
32	Electron-Only Reconnection in Plasma Turbulence. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	27
33	Asymptotic Evolution of Weakly Collisional Vlasov-Poisson Plasmas. <i>Physical Review Letters</i> , 2005, 95, 015002.	7.8	25
34	Time Window for Magnetic Reconnection in Plasma Configurations with Velocity Shear. <i>Physical Review Letters</i> , 2008, 101, 175003.	7.8	25
35	Double-reconnected magnetic structures driven by Kelvin-Helmholtz vortices at the Earth's magnetosphere. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	23
36	On the breaking of a plasma wave in a thermal plasma. I. The structure of the density singularity. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	22

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37	Kelvin-Helmholtz vortices and double mid-latitude reconnection at the Earth's magnetopause: Comparison between observations and simulations. <i>Europhysics Letters</i> , 2014, 107, 19001.	2.0	21
38	Pressure tensor in the presence of velocity shear: Stationary solutions and self-consistent equilibria. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	21
39	Collisionless magnetic reconnection in the presence of a sheared velocity field. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	20
40	Cluster observations of whistler waves correlated with ionâ€scale magnetic structures during the 17 August 2003 substorm event. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 6072-6089.	2.4	20
41	Northâ€South Asymmetric Kelvinâ€Helmholtz Instability and Induced Reconnection at the Earth's Magnetospheric Flanks. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 9340-9356.	2.4	19
42	Simulation of Plasmaspheric Plume Impact on Dayside Magnetic Reconnection. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL086546.	4.0	19
43	Two-fluid numerical simulations of turbulence inside Kelvin-Helmholtz vortices: Intermittency and reconnecting current sheets. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	18
44	On the breaking of a plasma wave in a thermal plasma. II. Electromagnetic wave interaction with the breaking plasma wave. <i>Physics of Plasmas</i> , 2012, 19, 113103.	1.9	17
45	Theory and applications of the Vlasov equation. <i>European Physical Journal D</i> , 2015, 69, 1.	1.3	17
46	Nonlinear vortex dynamics in an inhomogeneous magnetized plasma with a sheared velocity field. <i>Plasma Physics and Controlled Fusion</i> , 2011, 53, 015003.	2.1	16
47	Magnetised Kelvin-Helmholtz instability in the intermediate regime between subsonic and supersonic regimes. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	16
48	Satellite Dataâ€Based 3â€D Simulation of Kelvinâ€Helmholtz Instability and Induced Magnetic Reconnection at the Earth's Magnetopause. <i>Geophysical Research Letters</i> , 2019, 46, 11597-11605.	4.0	15
49	Solar wind interaction with the Earth's magnetosphere: the role of reconnection in the presence of a large scale sheared flow. <i>Nonlinear Processes in Geophysics</i> , 2009, 16, 1-10.	1.3	14
50	Signatures of Cold Ions in a Kinetic Simulation of the Reconnecting Magnetopause. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 2497.	2.4	14
51	ViDA: a Vlasovâ€Darwin solver for plasma physics at electron scales. <i>Journal of Plasma Physics</i> , 2019, 85, .	2.1	13
52	Compressible Kelvin-Helmholtz instability in supermagnetosonic regimes. <i>Journal of Geophysical Research</i> , 2011, 116, n/a-n/a.	3.3	12
53	Pressure anisotropy generation in a magnetized plasma configuration with a shear flow velocity. <i>Plasma Physics and Controlled Fusion</i> , 2016, 58, 045007.	2.1	11
54	In situ spacecraft observations of a structured electron diffusion region during magnetopause reconnection. <i>Physical Review E</i> , 2019, 99, 043204.	2.1	11

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55	Energy Conversions Associated With Magnetic Reconnection. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, .	2.4	10
56	On the transition between the Weibel and the whistler instabilities. <i>Plasma Physics and Controlled Fusion</i> , 2010, 52, 095007.	2.1	9
57	Identifying Magnetic Reconnection in 2D Hybrid Vlasov Maxwell Simulations with Convolutional Neural Networks. <i>Astrophysical Journal</i> , 2020, 900, 86.	4.5	9
58	Detecting Reconnection Events in Kinetic Vlasov Hybrid Simulations Using Clustering Techniques. <i>Astrophysical Journal</i> , 2021, 908, 107.	4.5	8
59	Statistical properties of turbulent fluctuations associated with electron-only magnetic reconnection. <i>Astronomy and Astrophysics</i> , 2020, 642, A45.	5.1	8
60	Perpendicular electron trapping associated with nonlinear whistlers. <i>Physics of Plasmas</i> , 2001, 8, 3217-3226.	1.9	7
61	Coupling between whistler waves and slow-mode solitary waves. <i>Physics of Plasmas</i> , 2012, 19, 052103.	1.9	7
62	Fourâ€œSpacecraft Measurements of the Shape and Dimensionality of Magnetic Structures in the Nearâ€œEarth Plasma Environment. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 6850-6868.	2.4	7
63	Latitudinal Dependence of the Kelvinâ€œHelmholtz Instability and Beta Dependence of Vortexâ€œInduced Highâ€œGuide Field Magnetic Reconnection. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2019JA027333.	2.4	7
64	Twoâ€œDimensional Velocity of the Magnetic Structure Observed on July 11, 2017 by the Magnetospheric Multiscale Spacecraft. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, e2020JA028705.	2.4	7
65	Interplay between Kelvinâ€œHelmholtz and lower-hybrid drift instabilities. <i>Journal of Plasma Physics</i> , 2019, 85, .	2.1	6
66	Bridging hybrid- and full-kinetic models with Landau-fluid electrons. <i>Astronomy and Astrophysics</i> , 2021, 653, A156.	5.1	6
67	Characterizing current structures in 3D hybrid-kinetic simulations of plasma turbulence. <i>Astronomy and Astrophysics</i> , 2021, 655, A107.	5.1	6
68	Propagation of a short proton beam through a thin plasma slab. <i>Physical Review E</i> , 2003, 68, 066406.	2.1	5
69	Collisionless magnetic reconnection. <i>Plasma Physics and Controlled Fusion</i> , 2007, 49, B439-B446.	2.1	5
70	â€œEchographyâ€œ of Vlasov codes. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2006, 355, 381-385.	2.1	4
71	A one dimensional, electrostatic Vlasov model for the generation of suprathermal electron tails in solar wind conditions. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	4
72	Crossing of Plasma Structures by Spacecraft: A Path Calculator. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 10119-10140.	2.4	4

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73	Counterstreaming beams in magnetised Vlasov plasma. <i>Pramana - Journal of Physics</i> , 2019, 93, 1.	1.8	3
74	Atmospheric propellant fed Hall thruster discharges: 0D-hybrid model and experimental results. <i>Plasma Sources Science and Technology</i> , 2022, 31, 075003.	3.1	3
75	Generation of a Nonuniform Transverse Ion Flow by a Propagating Electrostatic Wave in a Strongly Magnetized Hot Plasma. <i>Transport Theory and Statistical Physics</i> , 2005, 34, 173-190.	0.4	2
76	A multi-fluid model of the magnetopause. <i>Annales Geophysicae</i> , 2020, 38, 275-286.	1.6	2
77	Kelvin-Helmholtz instability and induced magnetic reconnection at the Earth's magnetopause: a 3D simulation based on satellite data. <i>Plasma Physics and Controlled Fusion</i> , 2022, 64, 044014.	2.1	1
78	Secondary Instabilities in Two-Dimensional Collisionless Magnetic Field Line Reconnection in a Fluid Plasma. <i>AIP Conference Proceedings</i> , 2004, , .	0.4	0
79	Generation of suprathermal electron tails in the solar wind. <i>AIP Conference Proceedings</i> , 2004, , .	0.4	0
80	Interplay between Magnetic Reconnection and the Kelvin-Helmholtz and Rayleigh-Taylor Instabilities in a Magnetized Inhomogeneous Plasma with a Velocity Shear. , 2008, , .		0
81	Study of PVI-based diagnostics for 1D time-series in space plasma. <i>Astronomy and Astrophysics</i> , 0, , .	5.1	0
82	MAGNETIC FIELD GENERATION IN ANISOTROPIC RELATIVISTIC PLASMA REGIMES. , 2007, , .		0