Tommaso Vinci

List of Publications by Year in descending order

109 papers	2,495 citations	186265 28 h-index	206112 48 g-index
112 all docs	112 docs citations	112 times ranked	2625 citing authors

#	Article	IF	Citations
1	Smilei : A collaborative, open-source, multi-purpose particle-in-cell code for plasma simulation. Computer Physics Communications, 2018, 222, 351-373.	7.5	282
2	Laboratory formation of a scaled protostellar jet by coaligned poloidal magnetic field. Science, 2014, 346, 325-328.	12.6	173
3	Progress in the study of warm dense matter. Plasma Physics and Controlled Fusion, 2005, 47, B441-B449.	2.1	120
4	Characterizing counter-streaming interpenetrating plasmas relevant to astrophysical collisionless shocks. Physics of Plasmas, 2012, 19, .	1.9	101
5	Are long gamma-ray bursts biased tracers of star formation? Clues from the host galaxies of theSwift/BAT6 complete sample of LGRBs. Astronomy and Astrophysics, 2015, 581, A102.	5.1	95
6	Observation of collapsing radiative shocks in laboratory experiments. Physics of Plasmas, 2006, 13, 082901.	1.9	85
7	Inhibition of fast electron energy deposition due to preplasma filling of cone-attached targets. Physics of Plasmas, 2008, 15, .	1.9	85
8	Astrophysics of Magnetically Collimated Jets Generated from Laser-Produced Plasmas. Physical Review Letters, 2013, 110, 025002.	7.8	61
9	Supersonic-Jet Experiments Using a High-Energy Laser. Physical Review Letters, 2007, 99, 265001.	7.8	58
10	Production of large volume, strongly magnetized laser-produced plasmas by use of pulsed external magnetic fields. Review of Scientific Instruments, 2013, 84, 043505.	1.3	57
11	Generation of high pressure shocks relevant to the shock-ignition intensity regime. Physics of Plasmas, 2014, 21, .	1.9	55
12	Radiative shocks: An opportunity to study laboratory astrophysics. Physics of Plasmas, 2006, 13, 056504.	1.9	54
13	Progress in warm dense matter study with applications to planetology. Physica Scripta, 2014, T161, 014060.	2.5	54
14	X-ray absorption spectroscopy of iron at multimegabar pressures in laser shock experiments. Physical Review B, 2015, 92, .	3.2	51
15	Probing local and electronic structure in Warm Dense Matter: single pulse synchrotron x-ray absorption spectroscopy on shocked Fe. Scientific Reports, 2016, 6, 26402.	3.3	50
16	Enhanced Isochoric Heating from Fast Electrons Produced by High-Contrast, Relativistic-Intensity Laser Pulses. Physical Review Letters, 2010, 104, 085001.	7.8	49
17	Decaying shock studies of phase transitions in MgOâ€“SiO₂ systems: Implications for the superâ€Earths' interiors. Geophysical Research Letters, 2016, 43, 9475-9483.	4.0	48
18	Temperature and melting of laser-shocked iron releasing into an LiF window. Physics of Plasmas, 2005, 12, 060701.	1.9	46

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19	Shock Hugoniot and temperature data for polystyrene obtained with quartz standard. Physics of Plasmas, 2009, 16, .	1.9	46
20	Magnetically Guided Fast Electrons in Cylindrically Compressed Matter. Physical Review Letters, 2011, 107, 065004.	7.8	45
21	Dynamic fracture of tantalum under extreme tensile stress. Science Advances, 2017, 3, e1602705.	10.3	41
22	Hard x-ray radiography for density measurement in shock compressed matter. Physics of Plasmas, 2008, 15, .	1.9	39
23	Laser-driven shock waves for the study of extreme matter states. Plasma Physics and Controlled Fusion, 2006, 48, B347-B358.	2.1	38
24	Classification of and recent research involving radiative shocks. Astrophysics and Space Science, 2009, 322, 77-84.	1.4	38
25	High pressures generated by laser driven shocks: applications to planetary physics. Nuclear Fusion, 2004, 44, S208-S214.	3.5	30
26	Hugoniot data of plastic foams obtained from laser-driven shocks. Physical Review E, 2006, 73, 047401.	2.1	30
27	Kinetics of the iron<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Î±</mml:mi><mml:mo>â^'</mml:mo><mml:mi>ε</mml:mi></mml:mrow></mml:math> transition at high-strain rates: Experiment and model. Physical Review B, 2016, 93, .	3.2	26
28	From lasers to the universe: Scaling laws in laboratory astrophysics. High Energy Density Physics, 2010, 6, 368-380.	1.5	29
29	Detailed characterization of laser-produced astrophysically-relevant jets formed via a poloidal magnetic nozzle. High Energy Density Physics, 2017, 23, 48-59.	1.5	25
30	Proton radiography of a shock-compressed target. Physical Review E, 2010, 82, 016407.	2.1	23
31	Optimization of interaction conditions for efficient short laser pulse amplification by stimulated Brillouin scattering in the strongly coupled regime. Physics of Plasmas, 2016, 23, .	1.9	22
32	Direct laser-driven ramp compression studies of iron: A first step toward the reproduction of planetary core conditions. High Energy Density Physics, 2013, 9, 243-246.	1.5	21
33	Metallization of Shock-Compressed Liquid Ammonia. Physical Review Letters, 2021, 126, 025003.	7.8	21
34	Temperature and electron density measurements on laser driven radiative shocks. Physics of Plasmas, 2006, 13, 010702.	1.9	20
35	Ultrafast observation of lattice dynamics in laser-irradiated gold foils. Applied Physics Letters, 2017, 110, .	3.3	20
36	In situ X-ray diffraction of silicate liquids and glasses under dynamic and static compression to megabar pressures. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 11981-11986.	7.1	20

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37	Laser-driven shock compression of â€œsynthetic planetary mixturesâ€•of water, ethanol, and ammonia. Scientific Reports, 2019, 9, 10155.	3.3	19
38	Laser-ablation and induced nanoparticle synthesis. Laser and Particle Beams, 2014, 32, 1-7.	1.0	18
39	Enhancement of Quasistationary Shocks and Heating via Temporal Staging in a Magnetized Laser-Plasma Jet. Physical Review Letters, 2017, 119, 255002.	7.8	18
40	Experimental Demonstration of an Inertial Collimation Mechanism in Nested Outflows. Physical Review Letters, 2014, 112, 155001.	7.8	17
41	Micron-scale phenomena observed in a turbulent laser-produced plasma. Nature Communications, 2021, 12, 2679.	12.8	17
42	Shockâ€induced silicate vaporization: The role of electrons. Journal of Geophysical Research, 2012, 117, .	3.3	16
43	Radiative Shock Experiments At Luli. Astrophysics and Space Science, 2005, 298, 69-74.	1.4	15
44	From quantum to classical modeling of radiation reaction: a focus on the radiation spectrum. Plasma Physics and Controlled Fusion, 2018, 60, 094002.	2.1	15
45	Density measurement of low-Zshocked material from monochromatic x-ray two-dimensional images. Physical Review E, 2008, 77, 045402.	2.1	14
46	High-power laser shock-induced dynamic fragmentation of iron foils. Physical Review B, 2010, 82, .	3.2	14
47	Dissociation along the principal Hugoniot of the Laser MÃ©gajoule ablator material. Physical Review E, 2016, 94, 023204.	2.1	14
48	Laboratory investigation of particle acceleration and magnetic field compression in collisionless colliding fast plasma flows. Communications Physics, 2019, 2, .	5.3	14
49	Laboratory disruption of scaled astrophysical outflows by a misaligned magnetic field. Nature Communications, 2021, 12, 762.	12.8	14
50	Adaptive SIMD optimizations in particle-in-cell codes with fine-grain particle sorting. Computer Physics Communications, 2019, 244, 246-263.	7.5	12
51	Theoretical and Experimental Studies of Radiative Shocks. Astrophysics and Space Science, 2007, 307, 159-164.	1.4	11
52	Interface velocity of laser shocked Fe/LiF targets. Physics of Plasmas, 2004, 11, L61-L64.	1.9	10
53	Measuring the structure and equation of state of polyethylene terephthalate at megabar pressures. Scientific Reports, 2021, 11, 12883.	3.3	10
54	Novel diagnostic of low-Z shock compressed material. High Energy Density Physics, 2006, 2, 1-6.	1.5	9

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55	A new target design for laser shock-compression studies of carbon reflectivity in the megabar regime. European Physical Journal D, 2013, 67, 1.	1.3	9
56	Probing iron at Super-Earth core conditions. Physics of Plasmas, 2015, 22, .	1.9	9
57	Direct Observation of Shockâ€Induced Disordering of Enstatite Below the Melting Temperature. Geophysical Research Letters, 2020, 47, e2020GL088887.	4.0	9
58	Electrical conductivity of warm dense silica from double-shock experiments. Nature Communications, 2021, 12, 840.	12.8	9
59	Hydrodynamics of laser-produced plasma corona measured by optical interferometry. Plasma Physics and Controlled Fusion, 2008, 50, 105013.	2.1	8
60	Preliminary results from recent experiments and future roadmap to Shock Ignition of Fusion Targets. Journal of Physics: Conference Series, 2012, 399, 012005.	0.4	8
61	Study of plasma heating induced by fast electrons. Physics of Plasmas, 2009, 16, 122701.	1.9	7
62	Simulating earth core using high energy lasers. High Energy Density Physics, 2010, 6, 210-214.	1.5	7
63	Density and Temperature Measurements on Laser Generated Radiative Shocks. Astrophysics and Space Science, 2005, 298, 333-336.	1.4	6
64	Laser-driven flyer impact experiments at the LULI 2000 laserÂfacility. European Physical Journal Special Topics, 2006, 133, 1101-1105.	0.2	6
65	Coronal hydrodynamics of laser-produced plasmas. Physical Review E, 2008, 78, 046404.	2.1	6
66	Link between laboratory and astrophysical radiative shocks. Journal of Physics: Conference Series, 2008, 112, 042013.	0.4	6
67	Propagation of laser-generated plasma jet in an ambient medium. Plasma Physics and Controlled Fusion, 2009, 51, 124027.	2.1	6
68	Characterizing equation of state and optical properties of dynamically pre-compressed materials. Physics of Plasmas, 2019, 26, 042704.	1.9	6
69	X-ray powder diffraction in reflection geometry on multi-beam kJ-type laser facilities. Review of Scientific Instruments, 2021, 92, 013902.	1.3	6
70	Recent Laboratory Astrophysics Experiments at LULI. Plasma and Fusion Research, 2009, 4, 044-044.	0.7	5
71	Radiative shocks: New results for laboratory astrophysics. European Physical Journal Special Topics, 2006, 133, 1039-1041.	0.2	4
72	High Energy Density Physics on LULI2000 Laser Facility. AIP Conference Proceedings, 2006, , .	0.4	4

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73	Porous carbon EOS: numerical analysis. Radiation Effects and Defects in Solids, 2010, 165, 566-572.	1.2	4
74	Time-resolved spectroscopic observations of shockinduced silicate ionization. AIP Conference Proceedings, 2012, , .	0.4	4
75	Laser-driven quasi-isentropic compression experiments and numerical studies of the iron alpha-epsilon transition in the context of planetology. , 2012, , .		4
76	Laser-Plasma Interaction Experiment for Solar Burst Studies. Physical Review Letters, 2020, 124, 135001.	7.8	4
77	EOS measurements of pressure standard materials using laser-driven ramp-wave compression technique. Journal of Physics: Conference Series, 2010, 215, 012199.	0.4	3
78	Production and Diagnostics of Dense Matter. Contributions To Plasma Physics, 2015, 55, 67-77.	1.1	3
79	X-ray absorption near edge spectroscopy study of warm dense MgO. Physics of Plasmas, 2019, 26, 112703.	1.9	3
80	White-line evolution in shocked solid Ta evidenced by synchrotron x-ray absorption spectroscopy. Physical Review B, 2020, 102, .	3.2	3
81	Numerical study of Langmuir wave coalescence in laser-plasma interaction. Physics of Plasmas, 2021, 28, .	1.9	3
82	Laser-driven shocks in precompressed water samples. European Physical Journal Special Topics, 2006, 133, 1093-1095.	0.2	3
83	Characterization of the stability and dynamics of a laser-produced plasma expanding across a strong magnetic field. Matter and Radiation at Extremes, 2022, 7, .	3.9	3
84	Time-Resolved Analysis of High-Power-Laser Produced Plasma Expansion in Vacuum. AIP Conference Proceedings, 2005, , .	0.4	2
85	Laboratory astrophysics using high energy lasers: need for 2D simulation. Journal of Physics: Conference Series, 2008, 112, 042012.	0.4	2
86	Recent experiment on fast electron transport in ultra-high intensity laser interaction. Journal of Physics: Conference Series, 2008, 112, 022048.	0.4	2
87	Plasma jet experiments in vacuum and in ambient medium using high energy lasers. Journal of Physics: Conference Series, 2008, 112, 042022.	0.4	2
88	Effect of plasma hydrodynamics on laser-produced bremsstrahlung MeV photon dose. Physics of Plasmas, 2020, 27, .	1.9	2
89	Experimental and numerical studies of radiative shocks. European Physical Journal Special Topics, 2006, 133, 1013-1017.	0.2	2
90	Novel Diagnostic of Shock Fronts in Low-Z Dense Plasmas. Astrophysics and Space Science, 2005, 298, 313-316.	1.4	1

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91	Time-Resolved Analysis of High-Power-Laser Produced Plasma Expansion. AIP Conference Proceedings, 2006, , .	0.4	1
92	Advances in the investigation of shock-induced reflectivity of porous carbon. Laser and Particle Beams, 2013, 31, 457-464.	1.0	1
93	Simple adaptations to speed-up the Particle-In-Cell code Smilei on the ARM-based Fujitsu A64FX processor. , 2022, , .		1
94	X-ray diffraction study of phase transformation dynamics of Fe and Fe-Si alloys along the shock Hugoniot using an x-ray free electron laser. Physical Review B, 2022, 105, .	3.2	1
95	Experimental Study of Laser Shock-Released States of Iron into a LiF Window. AIP Conference Proceedings, 2004, , .	0.4	0
96	High density energy physics experiments on LULI 2000 facility. European Physical Journal Special Topics, 2006, 133, 1065-1070.	0.2	0
97	Equations of state data of plastic foams obtained from laser driven shocks at PALS (Prague Asterix) Tj ETQq1 1 0.784314 rgBT /Overlo	0.4	0
98	Radiative Shocks And Plasma Jets As Laboratory Astrophysics Experiments. AIP Conference Proceedings, 2007, , .	0.4	0
99	MICROSTRUCTURAL INVESTIGATION OF LASER-SHOCKED IRON FOILS. , 2009, , .		0
100	Astrophysical outflows simulated by laser-driven plasma jets. Proceedings of the International Astronomical Union, 2010, 6, 402-403.	0.0	0
101	Optical interferometry and data analysis of laser-produced plasmas. , 2010, , .		0
102	Investigation of carbon in megabar regime. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 653, 116-120.	1.6	0
103	Characterization of laser-driven ultrafast shockless compression using gold targets. Journal of Applied Physics, 2014, 116, 043521.	2.5	0
104	Analysis of X-ray and Thomson scattering data from non-LTE Nb and Ta plasmas. High Energy Density Physics, 2015, 16, 41-52.	1.5	0
105	X-ray emission spectroscopy of well-characterised non-LTE plasmas. Journal of Physics: Conference Series, 2016, 688, 012039.	0.4	0
106	X-ray radiography based on the phase-contrast imaging with using LiF detector. Journal of Physics: Conference Series, 2021, 1787, 012027.	0.4	0
107	Classification of and recent research involving radiative shocks. , 2008, , 77-84.		0
108	Theoretical and Experimental Studies of Radiative Shocks. , 2006, , 159-164.		0

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109	A task programming implementation for the particle in cell code smilei. , 2022, , .		0