Tomaso Aste

List of Publications by Year
in descending order

127 papers	5,998 citations	94381 37 h-index	82499 72 g-index
132 all docs	132 docs citations	132 times ranked	3827 citing authors

#	Article	IF	Citations
1	A tool for filtering information in complex systems. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10421-10426.	3.3	689
2	Blockchain Technologies: The Foreseeable Impact on Society and Industry. Computer, 2017, 50, 18-28.	1.2	459
3	Long-term memories of developed and emerging markets: Using the scaling analysis to characterize their stage of development. Journal of Banking and Finance, 2005, 29, 827-851.	1.4	339
4	Geometrical structure of disordered sphere packings. Physical Review E, 2005, 71, 061302.	0.8	280
5	Scaling behaviors in differently developed markets. Physica A: Statistical Mechanics and Its Applications, 2003, 324, 183-188.	1.2	251
6	Correlation based networks of equity returns sampled at different time horizons. European Physical Journal B, 2007, 55, 209-217.	0.6	180
7	Onset of Mechanical Stability in Random Packings of Frictional Spheres. Physical Review Letters, 2008, 101, 018301.	2.9	150
8	Spread of risk across financial markets: better to invest in the peripheries. Scientific Reports, 2013, 3, 1665.	1.6	128
9	Emergence of Gamma distributions in granular materials and packing models. Physical Review E, 2008, 77, 021309.	0.8	126
10	Investigating the geometrical structure of disordered sphere packings. Physica A: Statistical Mechanics and Its Applications, 2004, 339, 16-23.	1.2	115
11	Dynamical generalized Hurst exponent as a tool to monitor unstable periods in financial time series. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 3180-3189.	1.2	114
12	Understanding the source of multifractality in financial markets. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 4234-4251.	1.2	111
13	Early coauthorship with top scientists predicts success in academic careers. Nature Communications, 2019, 10, 5170.	5.8	105
14	Correlation structure and dynamics in volatile markets. New Journal of Physics, 2010, 12, 085009.	1.2	104
15	Interplay between topology and dynamics in the World Trade Web. European Physical Journal B, 2007, 57, 159-164.	0.6	102
16	Structural and entropic insights into the nature of the random-close-packing limit. Physical Review E, 2008, 77, 031101.	0.8	102
17	Complex networks on hyperbolic surfaces. Physica A: Statistical Mechanics and Its Applications, 2005, 346, 20-26.	1.2	96
18	Hierarchical Information Clustering by Means of Topologically Embedded Graphs. PLoS ONE, 2012, 7, e31929.	1.1	87

#	ARTICLE	IF	CITATIONS
19	When Can Social Media Lead Financial Markets?. Scientific Reports, 2014, 4, 4213.	1.6	84
20	Variations around disordered close packing. Journal of Physics Condensed Matter, 2005, 17, S2361-S2390.	0.7	78
21	An invariant distribution in static granular media. Europhysics Letters, 2007, 79, 24003.	0.7	74
22	Disordered spherical bead packs are anisotropic. Europhysics Letters, 2010, 90, 34001.	0.7	70
23	Circle, sphere, and drop packings. Physical Review E, 1996, 53, 2571-2579.	0.8	67
24	Set Voronoi diagrams of 3D assemblies of aspherical particles. Philosophical Magazine, 2013, 93, 3993-4017.	0.7	65
25	Exponential smoothing weighted correlations. European Physical Journal B, 2012, 85, 1.	0.6	63
26	Network structure of the Wisconsin Schizotypy Scalesâ€"Short Forms: Examining psychometric network filtering approaches. Behavior Research Methods, 2018, 50, 2531-2550.	2.3	55
27	Relation between Financial Market Structure and the Real Economy: Comparison between Clustering Methods. PLoS ONE, 2015, 10, e0116201.	1.1	55
28	Ripples and ripples: from sandy deserts to ion-sputtered surfaces. New Journal of Physics, 2005, 7, 122-122.	1.2	54
29	The use of dynamical networks to detect the hierarchical organization of financial market sectors. European Physical Journal B, 2010, 73, 3-11.	0.6	54
30	Financial Time Series Forecasting Using Empirical Mode Decomposition and Support Vector Regression. Risks, 2018, 6, 7.	1.3	52
31	Volume Fluctuations and Geometrical Constraints in Granular Packs. Physical Review Letters, 2006, 96, 018002.	2.9	49
32	Local and global relations between the number of contacts and density in monodisperse sphere packs. Journal of Statistical Mechanics: Theory and Experiment, 2006, 2006, P07010-P07010.	0.9	49
33	The Multiplex Dependency Structure of Financial Markets. Complexity, 2017, 2017, 1-13.	0.9	49
34	Network Filtering for Big Data: Triangulated Maximally Filtered Graph. Journal of Complex Networks, 0, , cnw015.	1.1	48
35	An interest rates cluster analysis. Physica A: Statistical Mechanics and Its Applications, 2004, 339, 181-188.	1.2	45
36	Combining tomographic imaging and DEM simulations to investigate the structure of experimental sphere packings. Soft Matter, 2010, 6, 2992.	1.2	44

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37	Measuring multiscaling in financial time-series. Chaos, Solitons and Fractals, 2016, 88, 38-47.	2.5	44
38	Parsimonious modeling with information filtering networks. Physical Review E, 2016, 94, 062306.	0.8	43
39	Blockchain inefficiency in the Bitcoin peers network. EPJ Data Science, 2018, 7, .	1.5	43
40	Cryptocurrency market structure: connecting emotions and economics. Digital Finance, 2019, 1, 5-21.	1.0	41
41	Glass transition in self-organizing cellular patterns. Journal of Physics A, 1999, 32, 7049-7056.	1.6	38
42	Non-stationary multifractality in stock returns. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 6470-6483.	1.2	37
43	Cell theory for liquid solids and glasses: From local packing configurations to global complex behaviors. Europhysics Letters, 2004, 67, 165-171.	0.7	34
44	Surface instabilities in granular matter and ion-sputtered surfaces. Physica A: Statistical Mechanics and Its Applications, 2004, 332, 548-558.	1.2	33
45	Multi-scale correlations in different futures markets. European Physical Journal B, 2007, 58, 207-220.	0.6	33
46	Quantification of the heterogeneity of particle packings. Physical Review E, 2009, 80, 021302.	0.8	33
47	Graph Theory Enables Drug Repurposing â€" How a Mathematical Model Can Drive the Discovery of Hidden Mechanisms of Action. PLoS ONE, 2014, 9, e84912.	1.1	31
48	Structural transitions in granular packs: statistical mechanics and statistical geometry investigations. European Physical Journal B, 2008, 64, 511-517.	0.6	30
49	Relation Between Grain Shape and Fractal Properties in Random Apollonian Packing with Grain Rotation. Physical Review Letters, 2008, 101, 120602.	2.9	30
50	Measures of Causality in Complex Datasets with Application to Financial Data. Entropy, 2014, 16, 2309-2349.	1.1	30
51	Building complex networks with Platonic solids. Physical Review E, 2012, 85, 046115.	0.8	28
52	Dynamical networks from correlations. Physica A: Statistical Mechanics and Its Applications, 2006, 370, 156-161.	1.2	27
53	Dynamic correlations at different time-scales with empirical mode decomposition. Physica A: Statistical Mechanics and Its Applications, 2018, 502, 534-544.	1.2	26
54	Interest rates hierarchical structure. Physica A: Statistical Mechanics and Its Applications, 2005, 355, 21-33.	1.2	24

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55	Nested hierarchies in planar graphs. Discrete Applied Mathematics, 2011, 159, 2135-2146.	0.5	24
56	Exploring complex networks via topological embedding on surfaces. Physical Review E, 2012, 86, 036109.	0.8	24
57	Predicting future stock market structure by combining social and financial network information. Physica A: Statistical Mechanics and Its Applications, 2019, 535, 122343.	1.2	24
58	A Decentralized Digital Identity Architecture. Frontiers in Blockchain, 2019, 2, .	1.6	24
59	Information-theoretic measures for nonlinear causality detection: application to social media sentiment and cryptocurrency prices. Royal Society Open Science, 2020, 7, 200863.	1.1	23
60	Peer-to-peer loan acceptance and default prediction with artificial intelligence. Royal Society Open Science, 2020, 7, 191649.	1.1	22
61	Forecasting market states. Quantitative Finance, 2019, 19, 1491-1498.	0.9	20
62	Microstructures and mechanical properties of dense particle gels: Microstructural characterisation. Journal of the European Ceramic Society, 2008, 28, 1443-1449.	2.8	19
63	CENTRALITY AND PERIPHERALITY IN FILTERED GRAPHS FROM DYNAMICAL FINANCIAL CORRELATIONS. International Journal of Modeling, Simulation, and Scientific Computing, 2008, 11, 927-950.	0.9	19
64	Interplay between past market correlation structure changes and future volatility outbursts. Scientific Reports, 2016, 6, 36320.	1.6	19
65	Risk diversification: a study of persistence with a filtered correlation-network approach. Journal of Network Theory in Finance, 2015, 1, 77-98.	0.7	19
66	Innovation flow through social networks: productivity distribution in France and Italy. European Physical Journal B, 2005, 47, 459-466.	0.6	18
67	Granular Jamming With Hydraulic Control. , 2013, , .		17
68	The multilayer structure of corporate networks. New Journal of Physics, 2019, 21, 025002.	1.2	17
69	Reciprocity and impact in academic careers. EPJ Data Science, 2019, 8, .	1.5	17
70	Dependency structure and scaling properties of financial time series are related. Scientific Reports, 2014, 4, 4589.	1.6	16
71	Asymptotic scaling properties and estimation of the generalized Hurst exponents in financial data. Physical Review E, 2017, 95, 042311.	0.8	16
72	Sparse Causality Network Retrieval from Short Time Series. Complexity, 2017, 2017, 1-13.	0.9	16

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73	Specific Surface Area and Volume Fraction of the Cherry-Pit Model with Packed Pits. Journal of Physical Chemistry B, 2009, 113, 7780-7784.	1.2	15
74	Can Cryptocurrencies Preserve Privacy and Comply With Regulations?. Frontiers in Blockchain, 2019, 2, .	1.6	15
75	Excess reciprocity distorts reputation in online social networks. Scientific Reports, 2017, 7, 3551.	1.6	14
76	Correlation filtering in financial time series (Invited Paper). , 2005, 5848, 100.		12
77	Two different flavours of complexity in financial data. European Physical Journal: Special Topics, 2016, 225, 3105-3113.	1.2	12
78	Anomalous volatility scaling in high frequency financial data. Physica A: Statistical Mechanics and Its Applications, 2016, 447, 434-445.	1.2	12
79	The Cost of Bitcoin Mining Has Never Really Increased. Frontiers in Blockchain, 2020, 3, .	1.6	12
80	Systemic Losses Due to Counterparty Risk in a Stylized Banking System. Journal of Statistical Physics, 2014, 156, 998-1024.	0.5	11
81	Information Network Modeling for U.S. Banking Systemic Risk. Entropy, 2020, 22, 1331.	1.1	11
82	â€œNo Worries": Trends in Econophysics. European Physical Journal B, 2007, 55, 121-122.	0.6	10
83	Granular jamming transitions for a robotic mechanism. AIP Conference Proceedings, 2013, , .	0.3	10
84	Time-dependent scaling patterns in high frequency financial data. European Physical Journal: Special Topics, 2016, 225, 1997-2016.	1.2	9
85	A framework for Twitter events detection, differentiation and its application for retail brands. , 2016, , .		9
86	Relation between regional uncertainty spillovers in the global banking system. Journal of Network Theory in Finance, 2018, 4, 1-23.	0.7	9
87	Correlations and aggregate statistics in granular packs. European Physical Journal E, 2007, 22, 235-240.	0.7	8
88	Information Theoretic Causality Detection between Financial and Sentiment Data. Entropy, 2021, 23, 621.	1.1	8
89	Wisdom of crowds detects COVID-19 severity ahead of officially available data. Scientific Reports, 2021, 11, 13678.	1.6	8
90	Glasses and local packings. Physica A: Statistical Mechanics and Its Applications, 2003, 330, 189-194.	1.2	7

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91	Universal behaviour of the glass and the jamming transitions in finite dimensions for hard spheres. Soft Matter, 2017, 13, 8766-8771.	1.2	7
92	kGamma distributions in granular packs. , 2010, , .		6
93	Fine tuning DEM simulations to perform virtual experiments with three-dimensional granular packings. World Scientific Lecture Notes in Complex Systems, 2007, , 169-185.	0.1	5
94	sRandom walks on disordered networks. Physical Review E, 1997, 55, 6233-6236.	0.8	4
95	Stratifications of cellular patterns: hysteresis and convergence. European Physical Journal B, 2003, 33, 447-455.	0.6	4
96	Cell approach to glass transition. Journal of Physics Condensed Matter, 2003, 15, S803-S811.	0.7	4
97	Applications of physical methods in high-frequency futures markets. Proceedings of SPIE, 2007, , .	0.8	4
98	Scalability and Egalitarianism in Peer-to-Peer Networks. New Economic Windows, 2016, , 197-212.	1.0	4
99	The Shell Map. , 1999, , 497-510.		4
100	Topological regularization with information filtering networks. Information Sciences, 2022, 608, 655-669.	4.0	4
101	Dynamical partitions of space in any dimension. Journal of Physics A, 1998, 31, 8577-8593.	1.6	3
102	Multi-scaling modelling in financial markets. Proceedings of SPIE, 2007, , .	0.8	3
103	The pursuit of loosest packing. , 2009, , .		3
104	Random and frozen states in complex triangulations. Philosophical Magazine, 2012, 92, 246-254.	0.7	3
105	Analysing Social Media Forums to Discover Potential Causes of Phasic Shifts in Cryptocurrency Price Series. Frontiers in Blockchain, 2020, 3, .	1.6	3
106	Portfolio Optimization with Sparse Multivariate Modelling. SSRN Electronic Journal, 0, , .	0.4	3
107	A Counterparty Risk Study of UK Banking Systems. SSRN Electronic Journal, 0, , .	0.4	3
108	Equilibrium and evolution of froths under topological constraints. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1995, 71, 967-979.	0.6	2

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109	Extracting the correlation structure by means of planar embedding. , 2005, , .		2
110	Correlation-based biological networks. , 2007, , .		2
111	Virtual experiments on complex materials. , 2007, , .		2
112	Relation between Financial Market Structure and the Real Economy: Comparison between Clustering Methods. SSRN Electronic Journal, 2014, , .	0.4	2
113	To what extent does immigration affect inequality?. Physica A: Statistical Mechanics and Its Applications, 2016, 462, 1029-1039.	1.2	2
114	Risk-Neutral Pricing and Hedging of In-Play Football Bets. Applied Mathematical Finance, 2018, 25, 315-335.	0.8	2
115	Title is missing!. Physica A: Statistical Mechanics and Its Applications, 2006, 370, xi-xiv.	1.2	1
116	Self-referential order. Philosophical Magazine, 2013, 93, 3983-3992.	0.7	1
117	Forecasting Market States. SSRN Electronic Journal, 2018, , .	0.4	1
118	Reciprocity and Success in Academic Careers. SSRN Electronic Journal, 0, , .	0.4	1
119	Stress Testing and Systemic Risk Measures Using Elliptical Conditional Multivariate Probabilities. Journal of Risk and Financial Management, 2021, 14, 213.	1.1	1
120	Stress Testing and Systemic Risk Measures Using Multivariate Conditional Probability. SSRN Electronic Journal, 0, , .	0.4	1
121	Heterogeneous Criticality in High Frequency Finance: A Phase Transition in Flash Crashes. Entropy, 2022, 24, 257.	1.1	1
122	Materials and complexity: emergence of structural complexity in sphere packings. , 2005, , .		0
123	Self-organization in a complex plasma. , 2007, , .		0
124	Complex, inter-networked economic and social systems. European Physical Journal: Special Topics, 2016, 225, 1875-1877.	1.2	0
125	How Did EU Immigrants Affect Income and Wealth Inequality in the UK?. SSRN Electronic Journal, 0, , .	0.4	0
126	Causal coupling between European and UK markets triggered by announcements of monetary policy decisions. Royal Society Open Science, 2022, 9, 211342.	1.1	0

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127	Quantifying impact and response in markets using information filtering networks. Journal of Physics Complexity, 2022, 3, 025004.	0.9	0