Giovanni Mana

List of Publications by Year in descending order

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#	Article	IF	CITATIONS
1	Determination of the Avogadro Constant by Counting the Atoms in a <mmi:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi>Si</mml:mi><mml:mprescripts></mml:mprescripts><mml:none /><mml:mn>28</mml:mn></mml:none </mml:mmultiscripts>Crystal. Physical Review Letters, 2011, 106,</mmi:math 	7.8	183
2	Counting the atoms in a ²⁸ Si crystal for a new kilogram definition. Metrologia, 2011, 48, S1-S13.	1.2	160
3	Improved measurement results for the Avogadro constant using a ²⁸ Si-enriched crystal. Metrologia, 2015, 52, 360-375.	1.2	143
4	Considerations on future redefinitions of the kilogram, the mole and of other units. Metrologia, 2007, 44, 1-14.	1.2	114
5	Measurement of the silicon (220) lattice spacing. Physical Review Letters, 1994, 72, 3133-3136.	7.8	105
6	Present State of the Avogadro Constant Determination From Silicon Crystals With Natural Isotopic Compositions. IEEE Transactions on Instrumentation and Measurement, 2005, 54, 854-859.	4.7	73
7	Combined optical and X–ray interferometry for high–precision dimensional metrology. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2000, 456, 701-729.	2.1	70
8	A new determination of N/sub A/. IEEE Transactions on Instrumentation and Measurement, 1995, 44, 538-541.	4.7	68
9	The Avogadro constant determination via enriched silicon-28. Measurement Science and Technology, 2009, 20, 092002.	2.6	64
10	Progress at IMGC in the absolute determination of the silicon d. IEEE Transactions on Instrumentation and Measurement, 1989, 38, 210-216.	4.7	59
11	The calibration of Si isotope ratio measurements. International Journal of Mass Spectrometry, 2010, 291, 55-60.	1.5	51
12	Measurement of the lattice parameter of a silicon crystal. New Journal of Physics, 2009, 11, 053013.	2.9	49
13	Measurement of the {2 2 0} lattice-plane spacing of a ²⁸ Si x-ray interferometer. Metrologia 2011, 48, S37-S43.	' 1.2	49
14	A displacement and angle interferometer with subatomic resolution. Review of Scientific Instruments, 1993, 64, 3076-3081.	1.3	48
15	Si lattice parameter measurement by centimeter X-ray interferometry. Optics Express, 2008, 16, 16877.	3.4	42
16	The generalized weighted mean of correlated quantities. Metrologia, 2006, 43, S268-S275.	1.2	40
17	A More Accurate Measurement of the 28Si Lattice Parameter. Journal of Physical and Chemical Reference Data, 2015, 44, .	4.2	40
18	The (220) lattice spacing of silicon. IEEE Transactions on Instrumentation and Measurement, 1995, 44, 526-529.	4.7	39

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19	Phase Modulation in High-resolution Optical Interferometry. Metrologia, 1991, 28, 455-461.	1.2	36
20	Model selection in the average of inconsistent data: an analysis of the measured Planck-constant values. Metrologia, 2012, 49, 492-500.	1.2	35
21	Diffraction Effects in Optical Interferometers Illuminated by Laser Sources. Metrologia, 1989, 26, 87-93.	1.2	33
22	Lattice parameter and thermal expansion of monocrystalline silicon. Journal of Applied Physics, 1997, 82, 5396-5400.	2.5	33
23	Scanning X-ray interferometry and the silicon lattice parameter: towards relative uncertainty?. European Physical Journal B, 1999, 9, 225-232.	1.5	33
24	Lattice strain effects in the measurement of the Si lattice parameter by Laue-case double-crystal diffractometry. Journal of Applied Crystallography, 2004, 37, 773-777.	4.5	32
25	Effects of analyser deformation in scanning x-ray interferometry. Metrologia, 2004, 41, 238-245.	1.2	31
26	Measurement repetitions of the Si(220) lattice spacing. Metrologia, 2004, 41, 56-64.	1.2	31
27	Measurement equations for the determination of the Si molar mass by isotope dilution mass spectrometry. Metrologia, 2010, 47, 460-463.	1.2	31
28	Phase corrections in the optical interferometer for Si sphere volume measurements at NMIJ. Metrologia, 2011, 48, S104-S111.	1.2	31
29	Accuracy assessment of a least-squares estimator for scanning X-ray interferometry. Measurement Science and Technology, 1991, 2, 725-734.	2.6	30
30	The Avogadro constant. Rivista Del Nuovo Cimento, 1995, 18, 1-23.	5.7	29
31	A Fourier optics model of two-beam scanning laser interferometers. European Physical Journal D, 1999, 5, 433-440.	1.3	28
32	The Lattice Parameter of Silicon: A Survey. Metrologia, 1994, 31, 203-209.	1.2	27
33	The lattice parameter of the ²⁸ Si spheres in the determination of the Avogadro constant. Metrologia, 2011, 48, S44-S49.	1.2	27
34	Coupling of wavefront errors and jitter in the LISA interferometer: far-field propagation. Classical and Quantum Gravity, 2018, 35, 185013.	4.0	27
35	Confirmation of the INRiM and PTB Determinations of the Si Lattice Parameter. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 230-234.	4.7	25
36	Vectorial ray-based diffraction integral. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2015, 32, 1403.	1.5	24

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37	Avogadro constant measurements using enriched ²⁸ Si monocrystals. Metrologia, 2018, 55, L1-L4.	1.2	24
38	Servopositioning with picometer resolution. Review of Scientific Instruments, 1993, 64, 168-173.	1.3	23
39	Silicon lattice constant: limits in IMGC X-ray/optical interferometry. IEEE Transactions on Instrumentation and Measurement, 1991, 40, 98-102.	4.7	22
40	The expression of uncertainty in non-linear parameter estimation. Metrologia, 2006, 43, 396-402.	1.2	22
41	Location accuracy limitations for CCD cameras. Astronomy and Astrophysics, 2001, 367, 362-370.	5.1	22
42	Volume of Quasi-spherical Solid Density Standards. Metrologia, 1994, 31, 289-300.	1.2	21
43	Quantized positioning of x-ray interferometers. Review of Scientific Instruments, 1997, 68, 17-22.	1.3	21
44	Measurement repetitions of the Si (220) lattice spacing. Metrologia, 2004, 41, 445-446.	1.2	21
45	Comparison of the INRIM and PTB lattice-spacing standards. Metrologia, 2009, 46, 249-253.	1.2	21
46	The isotopic composition of enriched Si: a data analysis. Metrologia, 2011, 48, S32-S36.	1.2	21
47	Accurate measurements of the Avogadro and Planck constants by counting silicon atoms. Annalen Der Physik, 2013, 525, 680-687.	2.4	21
48	The Correlation of the <i>N</i> A Measurements by Counting 28Si Atoms. Journal of Physical and Chemical Reference Data, 2015, 44, .	4.2	21
49	Observation of Fresnel diffraction in a two-beam laser interferometer. Physical Review A, 1994, 49, 2167-2173.	2.5	19
50	Phase Holonomy in Optical Interferometry. Journal of Modern Optics, 1992, 39, 2053-2074.	1.3	18
51	Scanning LLL x-ray interferometry. Zeitschrift Für Physik B-Condensed Matter, 1997, 102, 197-206.	1.1	18
52	Aberration effects in two-beam laser interferometers. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 1951.	1.5	18
53	Uncertainty propagation in non-linear measurement equations. Metrologia, 2007, 44, 246-251.	1.2	18
54	Si primary standards for the calibration of ion-current ratios in the molar-mass measurement of natural Si single crystals. Metrologia, 2011, 48, S26-S31.	1.2	18

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55	The uncertainty of the phase-correction in sphere-diameter measurements. Metrologia, 2012, 49, 479-486.	1.2	18
56	Telescope jitters and phase noise in the LISA interferometer. Optics Express, 2019, 27, 16855.	3.4	18
57	On the Construction of a Zerodur Translation Device for X-Ray Interferometric Scanning. Metrologia, 1986, 22, 55-63.	1.2	17
58	Coupling of wavefront errors and pointing jitter in the LISA interferometer: misalignment of the interfering wavefronts. Classical and Quantum Gravity, 2018, 35, 245002.	4.0	16
59	Multigrid Monte Carlo simulation viaXYembedding. II. Two-dimensional SU(3) principal chiral model. Physical Review D, 1997, 55, 3674-3741.	4.7	15
60	Convective forces in high precision mass measurements. Measurement Science and Technology, 2002, 13, 13-20.	2.6	14
61	Present Status of the a Vogadro Constant Determination from Silicon Crystals with Natural Isotopic Composition. , 2004, , .		14
62	On the best fit of a line to uncertain observation pairs. Metrologia, 2005, 42, 376-382.	1.2	14
63	Elemental characterization of the Avogadro silicon crystal WASO 04 by neutron activation analysis. Metrologia, 2012, 49, 696-701.	1.2	14
64	Non-Linear Analysis of the Elastic Behaviour of a Translation Device for X-Ray Interferometry. Metrologia, 1989, 26, 219-227.	1.2	13
65	Scanning X-ray interferometry over a millimeter baseline. IEEE Transactions on Instrumentation and Measurement, 1997, 46, 576-579.	4.7	13
66	Bayesian inference of a negative quantity from positive measurement results. Metrologia, 2009, 46, 267-271.	1.2	13
67	A finite element analysis of surface-stress effects on measurement of the Si lattice parameter. Metrologia, 2013, 50, 243-248.	1.2	13
68	Lattice strain at c-Si surfaces: a density functional theory calculation. Metrologia, 2015, 52, 214-221.	1.2	13
69	³⁰ Si Mole Fraction of a Silicon Material Highly Enriched in ²⁸ Si Determined by Instrumental Neutron Activation Analysis. Analytical Chemistry, 2015, 87, 5716-5722.	6.5	12
70	The Measurement of the Silicon Lattice Parameter and the Count of Atoms to Realise the Kilogram. Mapan - Journal of Metrology Society of India, 2020, 35, 511-519.	1.5	12
71	Scanning LLL x-ray interferometry. Zeitschrift Für Physik B-Condensed Matter, 1997, 102, 189-196.	1.1	11
72	A two-axis tipÂtilt platform for x-ray interferometry. Measurement Science and Technology, 2003, 14, 717-723.	2.6	11

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73	Uncertainty assessment of Si molar mass measurements. International Journal of Mass Spectrometry, 2010, 289, 6-10.	1.5	11
74	Density functional theory calculations of the stress of oxidised (1 1 0) silicon surfaces. Metrologia, 2016, 53, 1339-1345.	1.2	11
75	A new analysis for diffraction correction in optical interferometry. Metrologia, 2017, 54, 559-565.	1.2	11
76	Beam-astigmatism in laser interferometry. IEEE Transactions on Instrumentation and Measurement, 1997, 46, 196-200.	4.7	10
77	Measuring small lattice distortions in Si-crystals by phase-contrast x-ray topography. Journal Physics D: Applied Physics, 2000, 33, 2678-2682.	2.8	10
78	Light Bounces in Two-Beam Scanning Laser Interferometers. Japanese Journal of Applied Physics, 2000, 39, 2870-2875.	1.5	10
79	Accuracy of laser beam center and width calculations. Applied Optics, 2001, 40, 1378.	2.1	10
80	Effect of recycled light in two-beam interferometry. Review of Scientific Instruments, 2005, 76, 053106.	1.3	10
81	Polarization delivery in heterodyne interferometry. Optics Express, 2013, 21, 27119.	3.4	10
82	Purity of ²⁸ Si-Enriched Silicon Material Used for the Determination of the Avogadro Constant. Analytical Chemistry, 2016, 88, 6881-6888.	6.5	10
83	Lattice bending in x-ray interferometers. European Physical Journal B, 1989, 76, 25-31.	1.5	9
84	A Fourier optics approach to the dynamical theory of X-ray diffraction – perfect crystals. Acta Crystallographica Section A: Foundations and Advances, 2004, 60, 40-50.	0.3	9
85	Measurement of the ³⁰ Si Mole Fraction in the New Avogadro Silicon Material by Neutron Activation and High-Resolution γ-Spectrometry. Analytical Chemistry, 2017, 89, 6726-6730.	6.5	9
86	Propagation of error analysis in a total least-squares estimator in absolute gravimetry. Metrologia, 2002, 39, 489-494.	1.2	8
87	Propagation of error analysis in least-squares procedures with second-order autoregressive measurement errors. Measurement Science and Technology, 2002, 13, 1505-1511.	2.6	8
88	Retrieval of the phase profile of digitized interferograms. Journal of Optics, 2003, 5, 418-424.	1.5	8
89	On the effect of broadband emission in external-cavity diode-laser interferometry. Measurement Science and Technology, 2007, 18, 1338-1342.	2.6	8
90	A Possible Solution for the Discrepancy Between the INRIM and NMIJ Values of the Si Lattice-Parameter. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 351-355.	4.7	8

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91	Sphericity analysis of solid density standards. Review of Scientific Instruments, 1998, 69, 1383-1390.	1.3	7
92	Observation of a bent crystal-lattice by x-ray interferometry. Optics Express, 2009, 17, 11172.	3.4	7
93	Calibration of a silicon crystal for absolute nuclear spectroscopy. Journal of Applied Crystallography, 2010, 43, 293-296.	4.5	7
94	Bayesian estimate of the degree of a polynomial given a noisy data sample. Measurement: Journal of the International Measurement Confederation, 2014, 55, 564-570.	5.0	7
95	Instrumental neutron activation analysis of an enriched 28Si single-crystal. Journal of Radioanalytical and Nuclear Chemistry, 2014, 299, 277-282.	1.5	7
96	Counting atoms. Nature Physics, 2016, 12, 522-522.	16.7	7
97	Diffraction effects in length measurements by laser interferometry. Optics Express, 2016, 24, 6522.	3.4	7
98	A Fizeau interferometer for astrometry in space: the metrology point of view. Measurement Science and Technology, 1999, 10, 1254-1260.	2.6	6
99	Simulation of the thermoelastic behavior of an LLL x-ray interferometer. Review of Scientific Instruments, 2000, 71, 1716-1722.	1.3	6
100	A Fourier optics approach to the dynamical theory of X-ray diffraction – continuously deformed crystallographica Section A: Foundations and Advances, 2004, 60, 283-293.	0.3	6
101	X-ray and Î ³ -ray propagation in bent crystals with flat and cylindrical surfaces. Acta Crystallographica Section A: Foundations and Advances, 2008, 64, 549-559.	0.3	6
102	The watt-balance operation: magnetic force and induced electric potential on a conductor in a magnetic field. Metrologia, 2013, 50, 164-169.	1.2	6
103	An automated resistor network to inspect the linearity of resistance-thermometry measurements. Measurement Science and Technology, 2013, 24, 107001.	2.6	6
104	The LISA interferometer: impact of stray light on the phase of the heterodyne signal. Classical and Quantum Gravity, 2019, 36, 075015.	4.0	6
105	The watt-balance operation: a continuous model of the coil interaction with the magnetic field. Metrologia, 2014, 51, S65-S71.	1.2	5
106	Interval estimations in metrology. Metrologia, 2014, 51, 191-196.	1.2	5
107	Neutron activation analysis of the ³⁰ Si content of highly enriched ²⁸ Si: proof of concept and estimation of the achievable uncertainty. Metrologia, 2014, 51, 354-360.	1.2	5
108	Quantification of the Void Volume in Single-Crystal Silicon. Analytical Chemistry, 2016, 88, 11678-11683.	6.5	5

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109	Impurities in a ²⁸ Si-Enriched Single Crystal Produced for the Realization of the Redefined Kilogram. Analytical Chemistry, 2017, 89, 6314-6317.	6.5	5
110	A new low-uncertainty measurement of the ³¹ Si half-life. Metrologia, 2017, 54, 410-416.	1.2	5
111	Wavefront errors in a two-beam interferometer. Metrologia, 2018, 55, 535-540.	1.2	5
112	Neutron interference from a split-crystal interferometer. Journal of Applied Crystallography, 2022, 55, 870-875.	4.5	5
113	Optically polished surfaces parallel to the (220) lattice planes of silicon monocrystals. Measurement Science and Technology, 1999, 10, 549-553.	2.6	4
114	Influence of surface stress in the determination of the (2 2 0) lattice spacing of silicon. Metrologia, 2008, 45, 110-118.	1.2	4
115	The self-weight deformation of an x-ray interferometer. Metrologia, 2011, 48, S50-S54.	1.2	4
116	The detection of signals hidden in noise. Metrologia, 2013, 50, 269-276.	1.2	4
117	Design of an interferometric displacement sensor with picometer resolution for the Galileo-Galilei mission. , 2015, , .		4
118	Interlaboratory consensus building. Metrologia, 2021, 58, 055002.	1.2	4
119	<title>Applications of x-ray interferometry in metrology and phase-contrast imaging</title> . , 2002, , .		3
120	Accuracy assessment of data analysis in absolute gravimetry. IEEE Transactions on Instrumentation and Measurement, 2003, 52, 500-503.	4.7	3
121	Bayesian estimate of the zero-density frequency of a Cs fountain. Metrologia, 2009, 46, 629-636.	1.2	3
122	Forward scattering in two-beam laser interferometry. Metrologia, 2018, 55, 222-228.	1.2	3
123	Corrections of the travelling-fringe period for the interference of aberrated beams. Metrologia, 2019, 56, 055004.	1.2	3
124	The least informative distribution and correlation coefficient of measurement results. Metrologia, 2021, 58, 015012.	1.2	3
125	Measurement of miscut angles in the determination of Si lattice parameters. Metrologia, 2021, 58, 034004.	1.2	3
126	International Workshop on the Avogadro Constant and the Representation of the Silicon Mole. Metrologia, 1994, 31, 155-155.	1.2	3

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127	X-ray phase-contrast topography to measure the surface stress and bulk strain in a silicon crystal. Journal of Applied Crystallography, 2020, 53, 1195-1202.	4.5	3
128	The fundamental constants of physics and the International System of Units. Rendiconti Lincei, 2021, 32, 655-663.	2.2	3
129	The kilogram: inertial or gravitational mass?. Metrologia, 0, , .	1.2	3
130	Simulation of Monolithic Silicon LLL Scanning X-Ray Interferometer. Japanese Journal of Applied Physics, 1997, 36, 5356-5360.	1.5	2
131	Active distance stabilization of large bodies with picometer repeatability. , O, , .		2
132	Status of the n <inf>a</inf> determination by counting atoms in silicon crystals. , 2010, , .		2
133	Stray capacitances in the watt balance operation: electrostatic forces. Metrologia, 2014, 51, S72-S79.	1.2	2
134	Optimization of statistical methods for HpGe gamma-ray spectrometer used in wide count rate ranges. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 824, 99-100.	1.6	2
135	Model uncertainty and reference value of the Planck constant. Measurement: Journal of the International Measurement Confederation, 2016, 94, 26-30.	5.0	2
136	The ellipsoidal nested sampling and the expression of the model uncertainty in measurements. International Journal of Modern Physics B, 2016, 30, 1541002.	2.0	2
137	Self-weight effect in the measurement of the volume of silicon spheres. Metrologia, 2018, 55, 294-301.	1.2	2
138	Bayesian model selection applied to linear regressions with weighted data. Metrologia, 2019, 56, 025003.	1.2	2
139	Bayesian inference of a negative quantity from positive measurement results. , 2009, , .		1
140	Use of Bayesian statistics to reduce the density shift uncertainty in Cesium fountain. , 2010, , .		1
141	Realization of the anticipated definition of the kilogram. , 2012, , .		1
142	Modelling laser interferometers for the measurement of the Avogadro constant. , 2013, , .		1
143	A two thickness interferometer for lattice strain investigations. , 2016, , .		1
144	Defocused travelling fringes in a scanning triple-Laue X-ray interferometry setup. Journal of Applied Crystallography, 2021, 54, 1403-1408.	4.5	1

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145	Fake tilts in differential wavefront sensing. Optics Express, 2019, 27, 34505.	3.4	1
146	Electromagnetic quantities and units derived from classical relativistic electrodynamics. American Journal of Physics, 1988, 56, 1081-1085.	0.7	0
147	Beam-astigmatism in laser interferometry. , 0, , .		Ο
148	Scanning X-ray interferometry over a millimeter baseline. , 0, , .		0
149	Critical aspects of scanning X-ray/optical interferometry. , 0, , .		0
150	Sub-nanometric metrology for high resolution astrometric interferometry. , 0, , .		0
151	<title>Enabling interferometry technologies for the GAIA astrometric mission</title> . , 1999, , .		Ο
152	A new scanning X-ray interferometer [for basic physical constants determination]. , 0, , .		0
153	Analysis of lattice-strain effects in LLL X-ray interferometers by Takagi equations. , 0, , .		о
154	The Si-route to the Avogadro constant: new measurements of the molar volume and lattice parameter in an integrated international approach. , 0, , .		0
155	Remeasurement of the (220) lattice spacing of silicon. , 0, , .		0
156	Measurement of the Avogadro Constant and Mise EN Pratique of an Atomic Definition of the Kilogram by A 28Si Single-Crystal. , 2004, , .		0
157	Effect of lattice strains in the measurement of the (220) lattice spacing of silicon. , 2004, , .		0
158	Comparison of IMGC and PTB Absolute Determinations of the Si(220) Lattice Spacing. , 2004, , .		0
159	Joint IMGC-NMIJ Measurement of the Si (220) Lattice Spacing. , 2004, , .		0
160	Silicon lattice-parameter measurements with centimeter x-ray interferometry. , 2008, , .		0
161	Status of the international effort on the x-ray crystal density work and its progress towards a measurement of the Avogadro constant. , 2008, , .		0
162	Progress on the GAMS-6 double crystal γ-spectrometer. , 2008, , .		0

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163	Measurement of neutron binding energy of ³⁶ Cl for a determination of N <inf>A</inf> h. , 2008, , .		0
164	Estimation of the centre of a diffraction peak by triggering the goniometer-angle readingsviaphoton detection. Journal of Applied Crystallography, 2010, 43, 83-88.	4.5	0
165	Advances in the measurement of the ²⁸ Si lattice parameter. , 2010, , .		0
166	Laser interferometry in the Si lattice-parameter measurement. , 2012, , .		0
167	European metrology research programme: Advance on the realization of the kilogram redefinition. , 2014, , .		0
168	Assessment of the accuracy of the ²⁸ Si (220) plane spacing. , 2014, , .		0
169	The expression of the model uncertainty in measurements. , 2014, , .		0
170	Measuring the divergence of laser beams to correct interferometric displacement measurements. , 2014, , .		0
171	Ellipsoidal nested sampling, expression of the model uncertainty and measurement. Journal of Physics: Conference Series, 2015, 626, 012070.	0.4	0
172	Thermal Gradients in the Si Lattice Parameter Measurement. , 2018, , .		0
173	Diffraction Error in Laser Interferometry for the Measurement of the ²⁸ Si Lattice Parameter. , 2018, , .		0
174	Gravity and anisotropy effects in the volume determination of Si spheres for the kilogram realisation. Metrologia, 2020, 57, 045004.	1.2	0