

# Uwe Sterr

## List of Publications by Year in descending order

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168  
papers

7,198  
citations

47006

47  
h-index

58581

82  
g-index

170  
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170  
docs citations

170  
times ranked

3008  
citing authors

#	ARTICLE	IF	CITATIONS
1	Comparing ultrastable lasers at $7 \times 10^{-17}$ fractional frequency instability through a 2220 km optical fibre network. Nature Communications, 2022, 13, 212.	12.8	27
2	Thermal noise and mechanical loss of $\text{SiO}_2/\text{Ta}_2\text{O}_5$ optical coatings at cryogenic temperatures. Optics Letters, 2021, 46, 592.	3.3	9
3	Optical frequency ratio of a $^{171}\text{Yb}^+$ single-ion clock and a $^{87}\text{Sr}$ lattice clock. Metrologia, 2021, 58, 015005.	1.2	27
4	Blackbody radiation shift in strontium lattice clocks revisited. Physical Review Research, 2021, 3, .	3.6	6
5	Prospects and challenges for squeezing-enhanced optical atomic clocks. Nature Communications, 2020, 11, 5955.	12.8	30
6	Dynamical decoupling of laser phase noise in compound atomic clocks. Communications Physics, 2020, 3, .	5.3	11
7	Search for transient variations of the fine structure constant and dark matter using fiber-linked optical atomic clocks. New Journal of Physics, 2020, 22, 093010.	2.9	67
8	Long term measurement of the $^{87}\text{Sr}$ clock frequency at the limit of primary Cs clocks. Physical Review Research, 2020, 2, .	3.6	38
9	Transportable interrogation laser system with an instability of $1.6 \times 10^{-16}$ . Optics Express, 2020, 28, 16407.	3.4	17
10	End-to-end topology for fiber comb based optical frequency transfer at the $10^{-21}$ level: erratum. Optics Express, 2020, 28, 15023.	3.4	2
11	Micro-Integrated Laser Modules for Optical Clocks. , 2020, , .		0
12	Simple and compact diode laser system stabilized to Doppler-broadened iodine lines at 633 nm. Applied Optics, 2020, 59, 10808.	1.8	4
13	Demonstration of $4.8 \times 10^{-17}$ stability at 1 s for two independent optical clocks. Nature Photonics, 2019, 13, 714-719.	31.4	287
14	Demonstration of a Timescale Based on a Stable Optical Carrier. Physical Review Letters, 2019, 123, 173201.	7.8	34
15	Measuring the Thermal Expansion Coefficient of Ultrastable Materials with $10^{-9} \text{ K}^{-1}$ Uncertainty. , 2019, , .		1
16	SAGE: A proposal for a space atomic gravity explorer. European Physical Journal D, 2019, 73, 1.	1.3	75
17	End-to-end topology for fiber comb based optical frequency transfer at the $10^{-21}$ level. Optics Express, 2019, 27, 36886.	3.4	23
18	Crystalline optical cavity at 4 K with thermal-noise-limited instability and ultralow drift. Optica, 2019, 6, 240.	9.3	111

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19	Optical Atomic Clocks: From International Timekeeping to Gravity Potential Measurement. , 2019, , .		0
20	Optical frequency stability transfer using a single-branch Er:fiber frequency comb. , 2019, , .		0
21	Geodesy and metrology with a transportable optical clock. Nature Physics, 2018, 14, 437-441.	16.7	316
22	Silicon Cavity at 4 Kelvin with Thermal Noise Limited Performance. , 2018, , .		0
23	Spectral Purity Transfer for High Performance Strontium Lattice Clocks. , 2018, , .		0
24	Towards an optical clock for space: Compact, high-performance optical lattice clock based on bosonic atoms. Physical Review A, 2018, 98, .	2.5	81
25	Lattice-induced photon scattering in an optical lattice clock. Physical Review A, 2018, 97, .	2.5	29
26	Transportable Optical Lattice Clock with $\gamma$ - $\alpha$ Frequency Transfer. Physical Review Letters, 2017, 118, 073601.	7.8	168
27	Ground-state properties of $^{40}\text{Ca}^{2+}$ from narrow-line two-color photoassociation. Physical Review A, 2017, 95, .	2.4	5
28	Perspectives for a new realization of the pascal by optical methods. Metrologia, 2017, 54, S146-S161.	1.2	79
29	Ultrastable Silicon Cavity in a Continuously Operating Closed-Cycle Cryostat at 4 K. Physical Review Letters, 2017, 119, 243601.	7.8	77
30	Test of Special Relativity Using a Fiber Network of Optical Clocks. Physical Review Letters, 2017, 118, 221102.	7.8	155
31	$1.5\ \mu\text{m}$ Lasers with Sub-10 mHz Linewidth. Physical Review Letters, 2017, 118, 263202.	7.8	359
32	Ultrastable lasers based on low thermal noise optical resonators. , 2017, , .		0
33	An optical lattice clock breadboard demonstrator for the I-SOC mission on the ISS. , 2017, , .		4
34	Thermal Noise in Ultrastable Cavity-Referenced Lasers. , 2017, , .		0
35	$1.5\ \mu\text{m}$ Lasers with sub 10 mHz Linewidth. , 2017, , .		5
36	A second generation of low thermal noise cryogenic silicon resonators. Journal of Physics: Conference Series, 2016, 723, 012031.	0.4	24

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37	Development of a strontium optical lattice clock for the SOC mission on the ISS. Proceedings of SPIE, 2016, , .	0.8	10
38	A transportable optical lattice clock. Journal of Physics: Conference Series, 2016, 723, 012020.	0.4	8
39	Realization of a timescale with an accurate optical lattice clock. Optica, 2016, 3, 563.	9.3	110
40	Vibration Influence on Hit Probability During Beaconless Spatial Acquisition. Journal of Lightwave Technology, 2016, 34, 2500-2509.	4.6	19
41	Optical cryogenic silicon resonators. , 2016, , .		0
42	Planning constraints of low grazing altitude GEO-LEO laser links based on in-orbit data. Optical Engineering, 2016, 55, 111608.	1.0	0
43	A clock network for geodesy and fundamental science. Nature Communications, 2016, 7, 12443.	12.8	297
44	Ultra-stable clock laser system development towards space applications. Scientific Reports, 2016, 6, 33973.	3.3	49
45	Alphasat and sentinel 1A, the first 100 links. , 2015, , .		13
46	Noise and instability of an optical lattice clock. Physical Review A, 2015, 92, .	2.5	62
47	Nonlinear Zeeman effect in photoassociation spectra of $\text{Ca}$ near the $40\text{P}$ near	2.5	2
48	On the relation between uncertainties of weighted frequency averages and the various types of Allan deviations. Metrologia, 2015, 52, 565-574.	1.2	44
49	Development of a strontium optical lattice clock for the SOC mission on the ISS. Comptes Rendus Physique, 2015, 16, .	0.9	74
50	$10^{-17}$ fractional laser frequency instability with a long room-temperature cavity. Optics Letters, 2015, 40, 2112.	3.3	187
51	Quantum tests of the Einstein Equivalence Principle with the STE-QUEST space mission. Advances in Space Research, 2015, 55, 501-524.	2.6	151
52	A compact, robust, and transportable ultra-stable laser with a fractional frequency instability of $10^{-15}$ . Review of Scientific Instruments, 2014, 85, 113107.	1.3	52
53	A strontium lattice clock with $3 \times 10^{-17}$ inaccuracy and its frequency. New Journal of Physics, 2014, 16, 073023.	2.9	153
54	Ultrastable laser with average fractional frequency drift rate below $5 \times 10^{-19}$ /s. Optics Letters, 2014, 39, 5102.	3.3	56

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55	Reduction of residual amplitude modulation to $1 \text{ \AA} - 10^{-6}$ for frequency modulation and laser stabilization. Optics Letters, 2014, 39, 1980.	3.3	125
56	A transportable strontium optical lattice clock. Applied Physics B: Lasers and Optics, 2014, 117, 1107-1116.	2.2	75
57	Photoassociation spectroscopy of $\text{Ca}$ measured with kilohertz accuracy near the $40$ measured with	2.5	8
58	Thermal noise in optical reference resonators. , 2014, , .		0
59	Reducing the effect of thermal noise in optical cavities. Applied Physics B: Lasers and Optics, 2013, 113, 233-242.	2.2	27
60	Subhertz-linewidth infrared frequency source with a long-term instability below $5 \times 10^{-15}$ . Applied Physics B: Lasers and Optics, 2013, 110, 465-470.	2.2	4
61	Comparing PTB's optical $^{171}\text{Yb}$ ion and $^{87}\text{Sr}$ lattice clock. , 2013, , .		0
62	Providing $10^{-16}$ Short-Term Stability of a $1.5\text{-}\mu\text{m}$ Laser to Optical Clocks. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1556-1562.	4.7	47
63	Development of compact lattice optical clocks towards future space clocks. , 2013, , .		0
64	International timescales with optical clocks (ITOC). , 2013, , .		10
65	Long-range transport of ultracold atoms in a far-detuned one-dimensional optical lattice. New Journal of Physics, 2012, 14, 073020.	2.9	18
66	Thermal noise in optical cavities revisited. Journal of the Optical Society of America B: Optical Physics, 2012, 29, 178.	2.1	83
67	Measurement of the differential polarizability of the 698 nm clock transition of strontium for evaluation of optical lattice clocks. , 2012, , .		0
68	High Accuracy Correction of Blackbody Radiation Shift in an Optical Lattice Clock. Physical Review Letters, 2012, 109, 263004.	7.8	110
69	A sub-40 mHz laser based on a silicon single-crystal optical cavity. , 2012, , .		0
70	Frequency dissemination at the 19th decimal place. , 2012, , .		0
71	A small-linewidth absolute optical frequency source. , 2012, , .		0
72	The space optical clocks project: Development of high-performance transportable and breadboard optical clocks and advanced subsystems. , 2012, , .		20

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73	A sub-40-mHz-linewidth laser based on a silicon single-crystal optical cavity. Nature Photonics, 2012, 6, 687-692.	31.4	571
74	A compact and efficient strontium oven for laser-cooling experiments. Review of Scientific Instruments, 2012, 83, 103101.	1.3	40
75	Delivering pulsed and phase stable light to atoms of an optical clock. Applied Physics B: Lasers and Optics, 2012, 107, 301-311.	2.2	43
76	Beaconless acquisition for ISL and SGL, summary of 3 years operation in space and on ground. , 2011, , .		16
77	Remote frequency measurement of the $^1S_0 \rightarrow ^3P_1$ transition in laser-cooled $^{24}\text{Mg}$ . New Journal of Physics, 2011, 13, 125010.	2.9	26
78	Tackling the Blackbody Shift in a Strontium Optical Lattice Clock. IEEE Transactions on Instrumentation and Measurement, 2011, 60, 2550-2557.	4.7	52
79	The $^{87}\text{Sr}$ optical frequency standard at PTB. Metrologia, 2011, 48, 399-407.	1.2	102
80	Demonstration of a transportable 1 Hz-linewidth laser. Applied Physics B: Lasers and Optics, 2011, 104, 741-745.	2.2	53
81	Development of a cryogenic Sub-Hz laser system for optical clocks. , 2011, , .		0
82	Hyper-Ramsey spectroscopy of optical clock transitions. Physical Review A, 2010, 82, .	2.5	111
83	Compensation of field-induced frequency shifts in Ramsey spectroscopy of optical clock transitions. JETP Letters, 2010, 90, 713-717.	1.4	21
84	Tuning the thermal expansion properties of optical reference cavities with fused silica mirrors. Journal of the Optical Society of America B: Optical Physics, 2010, 27, 914.	2.1	100
85	Tackling the black body shift in a strontium optical lattice clock. , 2010, , .		2
86	Development of a transportable laser cooled strontium source for future applications in space. , 2010, , .		2
87	Phase-coherent frequency comparison of optical clocks using a telecommunication fiber link. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2010, 57, 175-181.	3.0	17
88	Collisional Losses, Decoherence, and Frequency Shifts in Optical Lattice Clocks with Bosons. Physical Review Letters, 2009, 103, 090801.	7.8	65
89	Determining the clock frequency shift due to collisions in a 1-D optical lattice clock with $^{88}\text{Sr}$ . , 2009, , .		0
90	Bose-Einstein Condensation of Alkaline Earth Atoms: $^{40}\text{Ca}$ . Physical Review Letters, 2009, 103, 130401.	7.8	123

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91	Phase-coherent frequency comparison of optical clocks using a telecommunication fiber link. , 2009, , .		7
92	Ultrastable lasers: new developments and applications. Proceedings of SPIE, 2009, , .	0.8	17
93	Interrogation Laser for a Strontium Lattice Clock. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 1252-1257.	4.7	16
94	The Stability of an Optical Clock Laser Transferred to the Interrogation Oscillator for a Cs Fountain. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 1258-1262.	4.7	45
95	Einstein Gravity Explorerâ€“a medium-class fundamental physics mission. Experimental Astronomy, 2009, 23, 573-610.	3.7	95
96	Phase-coherent comparison of two optical frequency standards over 146 km using a telecommunication fiber link. Applied Physics B: Lasers and Optics, 2009, 97, 541-551.	2.2	50
97	A sharper laser. Nature Physics, 2009, 5, 382-383.	16.7	9
98	Optical frequency transfer via 146 km fiber link with $10^{-19}$ relative accuracy. Optics Letters, 2009, 34, 2270.	3.3	133
99	Telecommunication fiber link for the remote characterization of a magnesium optical frequency standard. Proceedings of SPIE, 2009, , .	0.8	4
100	CLOCK LASER SYSTEM FOR A STRONTIUM LATTICE CLOCK. , 2009, , .		0
101	MEASUREMENT NOISE FLOOR FOR A LONG-DISTANCE OPTICAL CARRIER TRANSMISSION VIA FIBER. , 2009, , .		3
102	Low-frequency-noise diode laser for atom interferometry. Journal of the Optical Society of America B: Optical Physics, 2008, 25, 1632.	2.1	23
103	Clock laser system for strontium lattice clock. , 2008, , .		0
104	Frequency comparisons of optical frequency standards and new results on a long-distance carrier-phase optical fiber link. , 2007, , .		0
105	Ultracold $^{88}\text{Sr}$ atoms for an optical lattice clock. Frequency Control Symposium and Exhibition, Proceedings of the IEEE International, 2007, , .	0.0	2
106	Atomic Frequency Standards and their Impact on the Past, Present and Future of the Second. LEOS Summer Topical Meeting, 2007, , .	0.0	0
107	Influence of high-frequency laser frequency noise on the stability of an optical clock. Frequency Control Symposium and Exhibition, Proceedings of the IEEE International, 2007, , .	0.0	1
108	Optical Clocks in Space. Nuclear Physics, Section B, Proceedings Supplements, 2007, 166, 300-302.	0.4	30

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109	Atom interferometers and optical atomic clocks: New quantum sensors for fundamental physics experiments in space. Nuclear Physics, Section B, Proceedings Supplements, 2007, 166, 159-165.	0.4	38
110	Feasibility of narrow-line cooling in optical dipole traps. European Physical Journal D, 2007, 42, 317-324.	1.3	10
111	Determination of the calcium ground state scattering length by photoassociation spectroscopy at large detunings. European Physical Journal D, 2007, 44, 73-79.	1.3	20
112	Optical Frequency Standard Based on Ballistic Ca Atoms. , 2006, , .		0
113	Diode laser with 1 Hz linewidth. Optics Letters, 2006, 31, 736.	3.3	124
114	Vibration-insensitive reference cavity for an ultra-narrow-linewidth laser. Applied Physics B: Lasers and Optics, 2006, 83, 531-536.	2.2	121
115	Influence of Chirped Excitation Pulses in an Optical Clock With Ultracold Calcium Atoms. IEEE Transactions on Instrumentation and Measurement, 2005, 54, 771-775.	4.7	23
116	Optical Frequency Measurements Using fs- Comb Generators. IEEE Transactions on Instrumentation and Measurement, 2005, 54, 750-753.	4.7	15
117	Calcium optical frequency standard with ultracold atoms: Approaching $10^{-15}$ relative uncertainty. Physical Review A, 2005, 72, .	2.5	98
118	An improved optical clock with ultracold calcium atoms. , 2005, , .		1
119	An optical frequency standard with ultracold calcium atoms. , 2005, , .		0
120	Calibration of a Shack-Hartmann sensor for absolute measurements of wavefronts. Applied Optics, 2005, 44, 6419.	2.1	53
121	An Optical Frequency Standard with Cold and Ultra-cold Calcium Atoms. Lecture Notes in Physics, 2004, , 229-244.	0.7	5
122	Wavelength-dependent ac Stark shift of the $S_0 \rightarrow P_1$ transition at 657 nm in Ca. Physical Review A, 2004, 70, .	2.5	43
123	The optical calcium frequency standards of PTB and NIST. Comptes Rendus Physique, 2004, 5, 845-855.	0.9	65
124	Improved Optical Frequency Standard with Ultracold Calcium Atoms. , 2004, , .		0
125	Optical Frequency Measurements using Fs- Comb Generators. , 2004, , .		1
126	ULTRACOLD CALCIUM ATOMS FOR OPTICAL CLOCKS AND COLLISIONAL STUDIES. , 2004, , .		1

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127	An optical frequency standard with ultracold calcium atoms. , 2004, , .		0
128	Cold Sr atoms for an optical frequency standard. , 2004, , .		0
129	Improvement of the fractional uncertainty of a neutral-atom calcium optical frequency standard to $2 \times 10^{-14}$ . Applied Physics B: Lasers and Optics, 2003, 76, 149-156.	2.2	20
130	Optical frequency standard based on cold ca atoms. IEEE Transactions on Instrumentation and Measurement, 2003, 52, 250-254.	4.7	23
131	Prospects of Doppler cooling on forbidden lines. Journal of the Optical Society of America B: Optical Physics, 2003, 20, 985.	2.1	3
132	Ultracold calcium atoms for an optical frequency standard and cold collision studies. , 2003, , .		0
133	Photoassociation spectroscopy of cold calcium atoms. Physical Review A, 2003, 67, .	2.5	45
134	Spectroscopy with cold and ultracold strontium atoms. , 2003, , .		0
135	Diode laser frequency stabilization for a Ca optical clock. , 2003, , .		0
136	Optical Clock with Ultracold Neutral Atoms. Physical Review Letters, 2002, 89, 230801.	7.8	122
137	Doppler Cooling and Trapping on Forbidden Transitions. Physical Review Letters, 2001, 87, 123002.	7.8	145
138	Frequency stabilization of a 1.54- $\mu$ m DFB laser diode to Doppler-free absorption lines of acetylene. , 2001, , .		4
139	Calcium optical frequency standard. , 2001, 4269, 112.		0
140	Phase-coherent frequency measurements of the calcium- and ytterbium-optical frequency standards with a Kerr-lens modelocked femtosecond laser. , 2001, , .		0
141	Cooling by Maxwell's demon: Preparation of single-velocity atoms for matter-wave interferometry. Physical Review A, 2000, 62, .	2.5	9
142	Short-pulse properties of optical frequency comb generators. Applied Optics, 2000, 39, 4372.	2.1	17
143	Development and investigation of frequency references for the 1.55- $\mu$ m optical communication band. , 1999, 3571, 209.		0
144	Spin polarization and quantum-statistical effects in ultracold ionizing collisions. Physical Review A, 1999, 59, 1926-1935.	2.5	36

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145	A transportable optical calcium frequency standard. Applied Physics B: Lasers and Optics, 1999, 68, 27-38.	2.2	46
146	A novel stabilization method for an optical frequency comb generator. IEEE Transactions on Instrumentation and Measurement, 1999, 48, 574-577.	4.7	8
147	Atom Interferometry Based on Separated Light Fields. , 1997, , 293-362.		13
148	Magnetic inhibition of polarization-gradient laser cooling in $\lambda$ - $\lambda$ optical molasses. Physical Review A, 1996, 54, 2275-2279.	2.5	20
149	Ultracold collisions and optical shielding in metastable xenon. Physical Review A, 1996, 53, 1678-1689.	2.5	29
150	Topological phase shift in a cold-atom interferometer. Applied Physics B: Lasers and Optics, 1995, 60, 199-204.	2.2	16
151	Optical Control of Ultracold Collisions in Metastable Xenon. Physical Review Letters, 1995, 74, 506-509.	7.8	78
152	Lifetime of the metastable $6s^2 [1/2]_0$ clock state in xenon. Optics Letters, 1995, 20, 1192.	3.3	21
153	Determination of the xenon $6s [3/2]_2$ $6s^2 [1/2]_0$ clock frequency by interferometric wavelength measurements. Optics Letters, 1995, 20, 1421.	3.3	5
154	Atom Optics and Interferometry with Laser Cooled Atoms. , 1994, , .		0
155	Optical Ramsey spectroscopy on laser-trapped and thermal Mg atoms. Applied Physics B: Lasers and Optics, 1994, 59, 99-115.	2.2	56
156	Excitation of only a single recoil component in optical Ramsey interferometry using cross-over resonances. Optics Communications, 1994, 110, 99-104.	2.1	4
157	Atom-interferometric determination of the dc-Stark shift of the Mg-intercombination line. Optics Communications, 1993, 99, 172-176.	2.1	20
158	Optical Ramsey interferences on laser cooled and trapped atoms, detected by electron shelving. Optics Communications, 1993, 103, 73-78.	2.1	59
159	High-resolution isotope shift measurement of the Mg I $S_0 - 3 P_1$ intercombination transition. Applied Physics B, Photophysics and Laser Chemistry, 1993, 56, 62-64.	1.5	12
160	Hyperfine structure investigation on the $(3d^4)3 G_{4,5}$ levels of $^{47}Ti$ . Zeitschrift für Physik D-Atoms Molecules and Clusters, 1993, 27, 303-306.	1.0	6
161	Scheme for measuring a Berry phase in an atom interferometer. Physical Review A, 1993, 47, 2518-2522.	2.5	11
162	Optical ramsey interferometry with magnesium atoms. , 1993, , 36-50.		0

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163	The magnesium ramsey interferometer: Applications and prospects. Applied Physics B, Photophysics and Laser Chemistry, 1992, 54, 341-346.	1.5	81
164	Comparison between laser cooled and thermal Mg atoms for a future optical frequency standard. , 0, , .		0
165	Frequency stabilization of a 1.54 $\mu$ m DFB-laser diode to Doppler-free lines of acetylene. , 0, , .		0
166	Sub-Doppler atomic velocities for an optical frequency standard by Maxwell's demon cooling. , 0, , .		0
167	Preparation of single velocity atoms for matter wave interferometry. , 0, , .		0
168	A Ca optical frequency standard based on ultra-cold atoms. , 0, , .		0