Juan Gonzalo Muga

List of Publications by Citations

254 papers	8,544 citations	43 h-index	83 g-index
263 ext. papers	9,664 ext. citations	3 avg, IF	6.3 L-index

#	Paper	IF	Citations
254	Shortcuts to Adiabaticity. *Advances in Atomic, Molecular and Optical Physics*, **2013**, 62, 117-169	1.7	466
253	Fast optimal frictionless atom cooling in harmonic traps: shortcut to adiabaticity. *Physical Review Letters*, **2010**, 104, 063002	7.4	414
252	Shortcut to adiabatic passage in two- and three-level atoms. *Physical Review Letters*, **2010**, 105, 123003	7.4	377
251	Physical realization of -symmetric potential scattering in a planar slab waveguide. *Journal of Physics A*, **2005**, 38, L171-L176		375
250	Complex absorbing potentials. *Physics Reports*, **2004**, 395, 357-426	27.7	367
249	Arrival time in quantum mechanics. *Physics Reports*, **2000**, 338, 353-438	27.7	264
248	Shortcuts to adiabaticity: Concepts, methods, and applications. *Reviews of Modern Physics*, **2019**, 91,	40.5	263
247	Lewis-Riesenfeld invariants and transitionless quantum driving. *Physical Review A*, **2011**, 83,	2.6	241
246	Optimally robust shortcuts to population inversion in two-level quantum systems. *New Journal of Physics*, **2012**, 14, 093040	2.9	231
245	Multiple Schrödinger pictures and dynamics in shortcuts to adiabaticity. *Physical Review Letters*, **2012**, 109, 100403	7.4	172
244	Fast atomic transport without vibrational heating. *Physical Review A*, **2011**, 83,	2.6	160
243	Engineering of fast population transfer in three-level systems. *Physical Review A*, **2012**, 86,	2.6	157
242	Frictionless dynamics of Bose–Einstein condensates under fast trap variations. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2009**, 42, 241001	1.3	107
241	Systematic approach to define and classify quantum transmission and reflection times. *Physical Review A*, **1994**, 49, 4312-4325	2.6	101
240	Transient energy excitation in shortcuts to adiabaticity for the time-dependent harmonic oscillator. *Physical Review A*, **2010**, 82,	2.6	99
239	Optimal trajectories for efficient atomic transport without final excitation. *Physical Review A*, **2011**, 84,	2.6	98
238	Quantum transients. *Physics Reports*, **2009**, 476, 1-50	27.7	94

237	Shortcuts to adiabaticity in three-level systems using Lie transforms. *Physical Review A*, **2014**, 89,	2.6	86
236	Arrival time in quantum mechanics. *Physical Review A*, **1997**, 56, 3425-3435	2.6	84
235	Measurement-based approach to quantum arrival times. *Physical Review A*, **2002**, 66,	2.6	83
234	Transitionless quantum drivings for the harmonic oscillator. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2010**, 43, 085509	1.3	79
233	Shortcuts to adiabaticity for non-Hermitian systems. *Physical Review A*, **2011**, 84,	2.6	78
232	Shortcuts to adiabaticity: Fast-forward approach. *Physical Review A*, **2012**, 86,	2.6	76
231	Fast transport of Bose–Einstein condensates. *New Journal of Physics*, **2012**, 14, 013031	2.9	75
230	Time of Arrival in Quantum Mechanics. *Annals of Physics*, **1995**, 240, 351-366	2.5	74
229	Improving shortcuts to adiabaticity by iterative interaction pictures. *Physical Review A*, **2013**, 87,	2.6	69
228	Atom diode: A laser device for a unidirectional transmission of ground-state atoms. *Physical Review A*, **2004**, 70,	2.6	68
227	Transmission and reflection tunneling times. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1992**, 167, 24-28	2.3	68
226	Hamiltonian engineering via invariants and dynamical algebra. *Physical Review A*, **2014**, 89,	2.6	67
225	Fast and robust population transfer in two-level quantum systems with dephasing noise and/or systematic frequency errors. *Physical Review A*, **2013**, 88,	2.6	63
224	Arrival time distributions and perfect absorption in classical and quantum mechanics. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1999**, 253, 21-27	2.3	63
223	Space-time properties of free-motion time-of-arrival eigenfunctions. *Physical Review A*, **1998**, 58, 4336-4344	2.6	60
222	Free-motion time-of-arrival operator and probability distribution. *Physical Review A*, **1999**, 61,	2.6	60
221	Dynamics of a Tonks-Girardeau gas released from a hard-wall trap. *Europhysics Letters*, **2006**, 74, 965-971	1.6	58
220	Fast and robust spin manipulation in a quantum dot by electric fields. *Physical Review Letters*, **2012**, 109, 206602	7.4	56

219	Time-of-arrival distribution for arbitrary potentials and Wigner's time-energy uncertainty relation. *Physical Review A*, **2000**, 61,	2.6	56
218	Fast transitionless expansion of cold atoms in optical Gaussian-beam traps. *Physical Review A*, **2012**, 85,	2.6	55
217	Adiabaticity condition for non-Hermitian Hamiltonians. *Physical Review A*, **2014**, 89,	2.6	50
216	Transient and asymptotic effects in tunneling. *Physical Review A*, **1996**, 54, 3055-3066	2.6	50
215	Bounds and enhancements for negative scattering time delays. *Physical Review A*, **2002**, 66,	2.6	48
214	The time of arrival concept in quantum mechanics. *Superlattices and Microstructures*, **1998**, 23, 833-842	2.8	47
213	Decay by tunneling of bosonic and fermionic Tonks-Girardeau gases. *Physical Review A*, **2006**, 74,	2.6	45
212	Fast quasiadiabatic dynamics. *Physical Review A*, **2015**, 92,	2.6	43
211	Optimization of absorbing potentials. *Chemical Physics Letters*, **1994**, 228, 672-677	2.5	42
210	One-photon atomic cooling with an optical Maxwell demon valve. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2006**, 39, 3833-3838	1.3	41
209	Compact and high conversion efficiency mode-sorting asymmetric Y junction using shortcuts to adiabaticity. *Optics Letters*, **2014**, 39, 2306-9	3	39
208	Transport in a harmonic trap: Shortcuts to adiabaticity and robust protocols. *Physical Review A*, **2014**, 90,	2.6	39
207	Fast transport of two ions in an anharmonic trap. *Physical Review A*, **2013**, 88,	2.6	39
206	Wigner trajectories and Liouville's theorem. *Journal of Chemical Physics*, **1993**, 99, 2708-2714	3.9	39
205	Nonequilibrium solutions of the Boltzmann equation under the action of an external force. *Physical Review Letters*, **2014**, 112, 180602	7.4	37
204	Energy consumption for shortcuts to adiabaticity. *Physical Review A*, **2017**, 96,	2.6	36
203	Fast generation of spin-squeezed states in bosonic Josephson junctions. *Physical Review A*, **2012**, 86,	2.6	36
202	Time dependence of evanescent quantum waves. *Physical Review A*, **2000**, 62,	2.6	36

201	Exact and approximate complex potentials for modelling time observables. *Europhysics Letters*, **2004**, 67, 1-7	1.6	35
200	Composite Absorbing Potentials. *Physical Review Letters*, **1998**, 80, 5469-5472	7.4	35
199	Time-of-arrival distributions for interaction potentials. *Physical Review A*, **2001**, 64,	2.6	34
198	Fast phase gates with trapped ions. *Physical Review A*, **2017**, 95,	2.6	33
197	Collapse of spin-orbit-coupled Bose-Einstein condensates. *Physical Review A*, **2015**, 91,	2.6	33
196	Noise resistant quantum control using dynamical invariants. *New Journal of Physics*, **2018**, 20, 025006	2.9	33
195	Vibrational mode multiplexing of ultracold atoms. *Physical Review Letters*, **2013**, 111, 213001	7.4	33
194	Zeno physics in ultrastrong-coupling circuit QED. *Physical Review A*, **2010**, 81,	2.6	33
193	Barrier traversal times using a phenomenological track formation model. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1997**, 233, 227-232	2.3	33
192	Disclosing hidden information in the quantum Zeno effect: Pulsed measurement of the quantum time of arrival. *Physical Review A*, **2008**, 77,	2.6	33
191	Time modulation of atom sources. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2007**, 40, 975-987	1.3	32
190	Perfect absorbers for stationary and wavepacket scattering. *Journal of Physics A*, **1994**, 27, L439-L445		32
189	Solvable three-boson model with attractive Efunction interactions. *Physical Review A*, **1998**, 57, 3317-3329	2.6	30
188	Shortcuts to adiabaticity in optical waveguides using fast quasiadiabatic dynamics. *Optics Express*, **2017**, 25, 159-167	3.3	28
187	Operator-normalized quantum arrival times in the presence of interactions. *Physical Review A*, **2004**, 70,	2.6	28
186	Pulse design without the rotating-wave approximation. *Physical Review A*, **2015**, 92,	2.6	27
185	Short-time behaviour of the quantum survival probability. *Europhysics Letters*, **1996**, 35, 247-252	1.6	27
184	Dwell time and asymptotic behavior of the probability density. *Physical Review B*, **1995**, 52, 16381-16384	3.3	27

183	Fast shuttling of a trapped ion in the presence of noise. *Physical Review A*, **2014**, 89,	2.6	26
182	Average local values and local variances in quantum mechanics. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1998**, 238, 90-94	2.3	25
181	Adiabatic interpretation of a two-level atom diode, a laser device for unidirectional transmission of ground-state atoms. *Physical Review A*, **2006**, 73,	2.6	25
180	Role of initial state reconstruction in short- and long-time deviations from exponential decay. *Physical Review A*, **2006**, 73,	2.6	25
179	Fast transport of mixed-species ion chains within a Paul trap. *Physical Review A*, **2014**, 90,	2.6	24
178	On atomic time-of-arrival measurements with a laser of finite beam width. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2003**, 36, 2657-2669	1.3	24
177	Resonance expansions in quantum mechanics. *European Physical Journal D*, **2005**, 55, 1141-1150		24
176	Time-of-arrival distributions from position-momentum and energy-time joint measurements. *Physical Review A*, **2000**, 61,	2.6	24
175	Hamiltonian design to prepare arbitrary states of four-level systems. *Physical Review A*, **2018**, 97,	2.6	22
174	Detecting quantum backflow by the density of a Bose-Einstein condensate. *Physical Review A*, **2013**, 87,	2.6	22
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172	Sources of quantum waves. *Journal of Physics A*, **2001**, 34, 4289-4299		22
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170	Manufacturing time operators: Covariance, selection criteria, and examples. *Physical Review A*, **2010**, 82,	2.6	21
169	Improvement by laser quenching of an atom diode: a one-way barrier for ultra-cold atoms. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2006**, 39, L133-L138	1.3	21
168	Resonant tunneling transients and decay for a one-dimensional double barrier potential. *Journal of Applied Physics*, **2005**, 97, 013705	2.5	21
167	Comparison of classical and quantal evolution of phase space distribution functions. *Physica Scripta*, **1993**, 47, 732-739	2.6	21
166	Robust state preparation in quantum simulations of Dirac dynamics. *Physical Review A*, **2017**, 95,	2.6	20

165	Explanation and observability of diffraction in time. *Physical Review A*, **2011**, 83,	2.6	20
164	Time scales of tunneling decay of a localized state. *Physical Review A*, **2010**, 82,	2.6	20
163	Enhanced observability of quantum postexponential decay using distant detectors. *Physical Review A*, **2009**, 80,	2.6	20
162	Quantum times of arrival for multiparticle states. *Physical Review A*, **2002**, 65,	2.6	20
161	Are Anomalously Short Tunnelling Times Measurable?. *Annals of Physics*, **1996**, 248, 122-133	2.5	20
160	Equivalence between tunnelling times based on: (a) absorption probabilities, (b) the Larmor clock, and (c) scattering projectors. *Journal of Physics Condensed Matter*, **1992**, 4, L579-L584	1.8	20
159	Transient Particle Energies in Shortcuts to Adiabatic Expansions of Harmonic Traps. *Journal of Physical Chemistry A*, **2016**, 120, 2962-9	2.8	19
158	Shortcut to adiabaticity in internal bosonic Josephson junctions. *Physical Review A*, **2013**, 88,	2.6	19
157	Preparation of atomic Fock states by trap reduction. *Physical Review A*, **2009**, 79,	2.6	19
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154	Classical transmittance and tunnelling. *Journal of Physics A*, **1991**, 24, 2003-2012		19
153	Time-Dependent Quantum-Mechanical Approaches to the Continuous Spectrum: Scattering Resonances in a Finite Box. *Israel Journal of Chemistry*, **1989**, 29, 461-471	3.4	19
152	Phase space formalisms of quantum mechanics with singular kernel. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1997**, 231, 304-310	2.3	18
151	Matter-wave diffraction in time with a linear potential. *Journal of Physics A*, **2006**, 39, 5897-5906		18
150	Transmission, Reflection, and Interference Contributions to the Tunnelling Dwell Time. *Europhysics Letters*, **1993**, 22, 159-165	1.6	18
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148	Fast driving between arbitrary states of a quantum particle by trap deformation. *Physical Review A*, **2016**, 94,	2.6	18

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141	Does positive flux provide a valid definition of tunnelling times?. *Solid State Communications*, **1995**, 94, 979-982	1.6	16
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139	Shortcuts to adiabaticity in optical waveguides. *Europhysics Letters*, **2019**, 127, 34001	1.6	15
138	Invariant-Based Inverse Engineering of Crane Control Parameters. *Physical Review Applied*, **2017**, 8,	4.3	15
137	Three-dimensional effects in atom diodes: Atom-optical devices for one-way motion. *Physical Review A*, **2007**, 76,	2.6	15
136	Qubit gates with simultaneous transport in double quantum dots. *New Journal of Physics*, **2018**, 20, 113029	2.9	15
135	Vanishing efficiency of a speeded-up ion-in-Paul-trap Otto engine. *Europhysics Letters*, **2019**, 127, 20005	1.6	14
134	Fast and stable manipulation of a charged particle in a Penning trap. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2015**, 48, 075503	1.3	14
133	Asymmetric scattering by non-Hermitian potentials. *Europhysics Letters*, **2017**, 120, 20001	1.6	14
132	Symmetries and time operators. *Journal of Physics A: Mathematical and Theoretical*, **2010**, 43, 505303	2	14
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130	Quantum time-of-flight measurements: Kicked clock versus continuous clock. *Physical Review A*, **2003**, 67,	2.6	14

129	Evanescent waves in a time-of-arrival measurement model. *Physical Review A*, **2001**, 64,	2.6	14
128	Scattering by a separable potential in one dimension. *Canadian Journal of Physics*, **1990**, 68, 403-410	1.1	14
127	Shortcuts to adiabaticity for an ion in a rotating radially-tight trap. *New Journal of Physics*, **2016**, 18, 043014	2.9	14
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119	Explicit solution for a Gaussian wave packet impinging on a square barrier. *Journal of Physics A*, **2003**, 36, 2371-2378		13
118	Optimal atomic detection of ultracold atoms by control of detuning and spatial dependence of laser intensity. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2003**, 36, 3899-3907	1.3	13
117	Suppression of Rabi oscillations for moving atoms. *Physical Review A*, **2003**, 67,	2.6	13
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113	Solvable model for quantum wavepacket scattering in one dimension. *Journal of Physics A*, **1998**, 31, 9519-9534		13
112	Collisional Transitory Enhancement of the High Momentum Components of a Quantum Wave Packet. *Physical Review Letters*, **1998**, 81, 2621-2625	7.4	13

111	Violation of the Pure-State Condition by the Classically Evolved Wigner Function. *Europhysics Letters*, **1992**, 19, 569-573	1.6	13
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100	Comparison of Complex Potentials: Absorption Width and Robustness *Journal of Physical Chemistry A*, **1998**, 102, 9464-9469	2.8	11
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88	Interference of spin-orbit□oupled Bose-Einstein condensates. *Europhysics Letters*, **2014**, 106, 60004	1.6	9
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55	Fast state and trap rotation of a particle in an anisotropic potential. *Journal of Physics A: Mathematical and Theoretical*, **2019**, 52, 465301	2	5
54	Fast bias inversion of a double well without residual particle excitation. *Physical Review A*, **2015**, 92,	2.6	5
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