

Dr. Jing Li

Gender: Female Birth of date: Dec. 1986

Birth place: Zhejiang, China

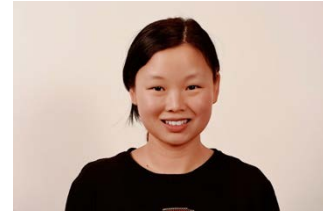
Current Position: Postdoctoral Researcher

Unit: Quantum Control via Shortcuts to Adiabaticity

University College Cork, Cork, Ireland

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Researcher interest: Quantum control, Cold atoms, Quantum thermodynamics



· Education & Work ·

2021.03—	University College Cork (Ireland)	Quantum Control via STA	Postdoc
2018.02—2021.03	Okinawa Institute of Sci. and Tech. (Japan)	Quantum systems unit	Postdoc
2014.09—2017.12	Shanghai University	Physics	Doctor
2009.09—2012.06	Zhejiang Normal University	Theoretical Physics	Master
2005.09—2009.06	Lishui College	Physics	Bachelor

· Experience ·

2015.09-2015.10	Okinawa Institute of Science and Technology Graduate University, Japan	Visiting
2016.03-2016.06	UPV/EHU-The University of the Basque Country, Spain	Visiting student
2016.10-2017.01	UPV/EHU, Spain	Visiting student
2017.03.09-03.26	OIST, Japan	Intern student
2019.04.27-05.13	Visiting Prof. Jason Twamley in Macquarie University, Australia	Invited researcher
2019.11-12	Visiting Prof. Sherman in UPV/EHU and Prof. Stephanie M. Reimann in Lund University, Sweden	Invited researcher

· Joined projects ·

2021.03—	Shortcut-Enhanced Quantum Thermodynamics (SEQT), SFI 19/FFP/6951, Ireland Group leader: Prof. Andreas Ruschhaupt
2018.02—2021.03	Quantum Heat engine in many-body systems, OIST, Japan Group leader: Prof. Thomas Busch
2014.09—2017.12	NSFC (11474193), the Shuguang program (14SG35), and the Program for Professor of Special Appointment (Eastern Scholar), Shanghai University, China Group leader: Prof. Xi Chen

· Academic Services ·

2014.7	2014 shortcuts to adiabaticity, International conference in Shanghai University	Secretary
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· Invited Talks/Posters ·

Selected invited talk:

2-5, Jan. 2020	“Controllable interaction in few-body quantum systems”, International workshop on Quantum Information, Quantum computing and Quantum control, Shanghai, China
24-27, Aug. 2021	“A Feshbach engine on nonlinear coupled density-spin Bose-Einstein condensates”, COCONUT, UCD, Dublin, Ireland

Selected Seminar:

18 th , Nov. 2019	Department of Mathematical Physics in Lund University, Lund, Sweden
15 th , July 2021	“A Feshbach engine on nonlinear coupled density-spin BEC”, FOMO lecture series,

Selected Posters:

15-17 th , Jul. 2019	Workshop on Quantum mixtures, Trento, Italy Poster title: “Controllable interaction in quantum few-body systems”
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· Publications ·

[1] Feng-De Zong, **Jing Li** and Changsheng Song, *Dynamics and Manipulation for Gap Solitons in Bose-Einstein Condensates under Optical Lattice and Harmonic Potentials*, Commun. Theor. Phys. **56**, 273-280 (2011).

- [2] Jun-Rong He, Hua-Mei Li, and **Jing Li**, *Analytical localized wave solutions of the generalized nonautonomous nonlinear Schrodinger equation with Gaussian shaped nonlinearity*, Opt. Commun. **285**, 3669-3673 (2012).
- [3] **Jing Li**, Feng-De Zong, et. al. *Dynamics of analytical three-dimensional solutions in Bose-Einstein condensates with time-dependent gain and potential*, Phys. Rev. E **85**, 036607 (2012).
- [4] **Jing Li**, Kun Sun, and Xi Chen, *Shortcuts to adiabatics control of soliton matter waves by tunable interaction*, Sci. Rep. **6**, 38258 (2016).
- [5] **Jing Li**, Qi Zhang, and Xi Chen, *Trigonometric protocols for shortcuts to adiabatic transport of cold atoms in anharmonic traps*, Physics Letters A **381**, 3272-3275 (2017).
- [6] **Jing Li**, T. Fogarty, S. Campbell, Th. Busch and X. Chen, *An efficient non-linear Feshbach engine*, New J. Phys. **20**, 015005 (2018).
- [7] Xi Chen, Ruan-Lei Jiang, **Jing Li**, Yue Ban, E. Ya. Sherman, *Inverse engineering for fast transport and spin control of spin-orbit-coupled Bose-Einstein condensates in moving harmonic traps*, Phys. Rev. A **97**, 013631 (2018).
- [8] Siwei Wang, **Jing Li**, Qian Kong, Xi Chen, *Fast soliton compression in nonlinear fiber via shortcuts to adiabaticity*. 2018 Asia Communications and Photonics Conference (ACP) 1-3 (2018).
- [9] T. Fogarty, L. Ruks, **Jing Li**, Th. Busch, *Fast control of interactions in an ultracold two atom system: Managing correlations and irreversibility*, SciPost, **6**, 021 (2019).
- [10] A. Kaha, T. Fogarty, **Jing Li**, Th. Busch, *Driving interaction efficiently in a composite few-body system*, Universe, **5**, 207 (2019). (Special issue: quantum dynamics and applications)
- [11] **Jing Li**, B. A Malomed, W. Li, X. Chen, E. Ya Sherman, *Coupled density-spin Bose-Einstein condensates dynamics and collapse in systems with quantic nonlinearity*, Communications in Nonlinear Science and Numerical Simulation, **82**, 105045 (2019). (2019 Impact factor: 3.967).
- [12] T. Xu, **Jing Li**, Th. Busch, Xi Chen and T. Fogarty, *Effects of coherence on quantum speed limits and shortcuts to adiabaticity in many-particle systems*, Phys. Rev. Research **2**, 023125 (2020).
- [13] Tim Keller, Thomás Fogarty, **Jing Li**, Thomas Busch, *A Feshbach engine in the Thomas-Fermi regime*, Phys. Rev. Research **2**, 033335 (2020).
- [14] T. Huang, J. Zhang, **Jing Li**, X. Chen, *Time-optimal variational control of a bright matter-wave soliton*, Physical Review A, **102**, 053323 (2020)
- [15] K. Gietka, F. Metz, T. Keller, **Jing Li**, *Adiabatic critical quantum metrology cannot reach the Heisenberg limit even when shortcuts to adiabaticity are applied*, Quantum, **5**, 489 (2021)
- [16] **Jing Li**, D. Guéry-Odelin, Xi Chen, J. G. Muga, *Fast transport of Bose-Einstein Condensates in anharmonic traps*. in preparation (2021).
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