

## Peter Domokos's list of publications

### Articles in peer reviewed journals

1. B. Gábor, D. Nagy, A. Vukics, P. Domokos  
Quantum bistability in the hyperfine ground state of atoms  
[Phys. Rev. Research 5, L042038 \(2023\)](#)
2. B. Gábor, D. Nagy, A. Dombi, T. W. Clark, F. I. B. Williams, K. V. Adwaith, A. Vukics, P. Domokos  
Ground-state bistability of cold atoms in a cavity  
[Phys. Rev. A 107, 023713 \(2023\)](#)
3. T. W. Clark, A. Dombi, F. I. B. Williams, Á. Kurkó, J. Fortágh, D. Nagy, A. Vukics, P. Domokos  
Time-resolved observation of a dynamical phase transition with atoms in a cavity  
[Phys. Rev. A 105, 063712 \(2022\)](#)
4. Árpád Kurkó, Peter Domokos, David Petrosyan, and András Vukics  
Collection efficiency of optical photons generated from microwave excitations of a Bose-Einstein condensate  
[Phys. Rev. A 105, 053708 \(2022\)](#)
5. A. Dombi, T. W. Clark, F.I. B. Williams, F. Jessen, J. Fortágh, D. Nagy, A. Vukics, P. Domokos  
Collective self-trapping of atoms in a cavity  
[New J. Phys. 23 083036 \(2021\)](#)
6. A. Vukics, G. Kónya, P. Domokos  
The gauge-invariant Lagrangian, the Power-Zienau-Woolley picture, and the choices of field momenta in nonrelativistic quantum electrodynamics  
[Scientific Reports 11, 16337 \(2021\)](#)
7. Á. Kurkó, P. Domokos, A. Vukics, T. Bækkegaard, N. T. Zinner, J. Fortágh, and D. Petrosyan  
Optimal collection of radiation emitted by a trapped atomic ensemble  
[EPJ Quantum Technology 8 : 11 \(2021\)](#)
8. O Kálmán, P Domokos  
Sensing microwave photons with a Bose-Einstein condensate  
[EPJ Quantum Technology 7 : 2, 1-13 \(2020\)](#)
9. A. Vukics, A. Dombi, J. M. Fink, and P. Domokos  
Finite-size scaling of the photon-blockade breakdown dissipative quantum phase transition  
[Quantum 3, 150 \(2019\)](#)
10. G. Kónya, D. Nagy, G. Szirmai, and P. Domokos  
Nonequilibrium polariton dynamics in a Bose-Einstein condensate coupled to an optical cavity  
[Physical Review A 98, 063608 \(2018\)](#)
11. D. Nagy, G. Kónya, P. Domokos, and G. Szirmai  
Quantum noise in a transversely-pumped-cavity Bose-Hubbard model  
[Physical Review A 97, 063602 \(2018\)](#)
12. A. Vukics and P. Domokos  
Infinitesimal multimode Bargmann-state representation  
[Journal of Russian Laser Research 39, 353-359 \(2018\)](#)
13. J. M. Fink, A. Dombi, A. Vukics, A. Wallraff, P. Domokos  
Observation of the Photon-Blockade Breakdown Phase Transition  
[Physical Review X 7, 011012 \(2017\)](#)
14. P. Federsel, C. Rogulj, T. Menold, Z. Darázs, P. Domokos, A. Günther, J. Fortágh  
Noise spectroscopy with a quantum gas  
[Physical Review A 95, 043603 \(2017\)](#)

15. D. Nagy and P. Domokos  
Critical exponent of quantum phase transitions driven by colored noise  
Physical Review A 94, 063862 (2016)
16. T. Giesser, A. Vukics, P. Domokos  
Depolarization shift of the superradiant phase transition  
Physical Review A 94, 033815 (2016)
17. O. Kálmán, Z. Darázs, F. Brennecke, P. Domokos  
Magnetic-noise-spectrum measurement by an atom laser in gravity  
Physical Review A 94, 033626 (2016)
18. D. Nagy, P. Domokos  
Nonequilibrium Quantum Criticality and Non-Markovian Environment: Critical Exponent of a Quantum Phase Transition  
Physical Review Letters 115, 043601 (2015)
19. A. Vukics, T. Grießer, P. Domokos  
Fundamental limitation of ultrastrong coupling between light and atoms  
Physical Review A 92, 043835 (2015)
20. A. Dombi, A. Vukics, P. Domokos  
Bistability effect in the extreme strong coupling regime of the Jaynes-Cummings model  
European Physical Journal D 69, 60 (2015)
21. G. Kónya, G. Szirmai, and P. Domokos  
Damping of quasiparticles in a Bose-Einstein condensate coupled to an optical cavity  
Physical Review A 90, 013623 (2014)
22. G. Kónya, G. Szirmai, D. Nagy, and P. Domokos  
Photonic tuning of Beliaev damping in a superfluid  
Physical Review A 89, 051601(R) (2014)
23. Z. Darázs, Z. Kurucz, O. Kálmán, T. Kiss, J. Fortágh, and P. Domokos  
Parametric Amplification of the Mechanical Vibrations of a Suspended Nanowire by Magnetic Coupling to a Bose-Einstein Condensate  
Physical Review Letters 112, 133603 (2014)
24. A. Vukics, T. Grießer, P. Domokos  
Elimination of the A-Square Problem from Cavity QED  
Physical Review Letters 112, 073601 (2014)
25. A. Dombi, A. Vukics, P. Domokos  
Optical bistability in strong-coupling cavity QED with a few atoms  
Journal of Physics B: At. Mol. Opt. Phys. 46 224010 (2013)
26. D. Nagy, G. Szirmai, P. Domokos  
Cavity optomechanics with a trapped, interacting Bose-Einstein condensate  
European Physical Journal D 67, 124 (2013)
27. H. Ritsch, P. Domokos, F. Brennecke, T. Esslinger  
Cold atoms in cavity generated dynamical optical potentials  
Reviews of Modern Physics 85, 553–601 (2013)
28. A. Dombi, P. Domokos  
Scattering model description of cascaded cavity configurations  
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29. A. Vukics, P. Domokos  
Adequacy of the Dicke model in cavity QED: A counter-no-go statement  
*Physical Review A* 86, 053807 (2012)
30. A. Xuereb, P. Domokos  
Dynamical scattering models in optomechanics: Going beyond the 'coupled cavities' model  
*New Journal of Physics* 14, 095027 (2012)
31. G. Kónya, D. Nagy, G. Szirmai, and P. Domokos  
Finite-size scaling in the quantum phase transition of the open-system Dicke model  
*Physical Review A* 86, Art. no. 013641 (2012)
32. O. Kálmán, T. Kiss, J. Fortágh, and P. Domokos  
Quantum Galvanometer by Interfacing a Vibrating Nanowire and Cold Atoms  
*Nano Letters* 12, 435–439 (2012)
33. G. Kónya, G. Szirmai, and P. Domokos  
Multimode mean-field model for the quantum phase transition of a Bose-Einstein condensate in an optical resonator  
*European Physical Journal D* 65, 33–42 (2011)
34. D. Nagy, G. Szirmai, and P. Domokos  
Critical exponent of a quantum-noise-driven phase transition: The open-system Dicke model  
*Physical Review A* 84, Art. no. 043637 (2011)
35. A. Xuereb, P. Domokos, P. Horak, and T. Freegarde  
Cavity cooling of atoms: within and without a cavity  
*European Physical Journal D* 65, 273–278 (2011)
36. A. Xuereb, T. Freegarde, P. Horak, and **P. Domokos**  
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*Physical Review Letters* 105, 013602 (2010)
37. D. Nagy, G. Kónya, G. Szirmai, and **P. Domokos**  
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*Physical Review Letters* 104, 130401 (2010)
38. G. Szirmai, D. Nagy, and **P. Domokos**  
Quantum noise of a Bose-Einstein condensate in an optical cavity, correlations, and entanglement  
*Physical Review A* 81, 043639 (2010)
39. A. Xuereb, **P. Domokos**, P. Horak, and T. Freegarde  
Scattering theory of multi-level atoms interacting with arbitrary radiation fields  
*Physica Scripta T* 140 (2010) 014010
40. D. Nagy, **P. Domokos**, A. Vukics, and H. Ritsch  
Nonlinear quantum dynamics of two BEC modes dispersively coupled by an optical cavity  
*European Physical Journal D* 55, 659–668 (2009)
41. A. Xuereb, **P. Domokos**, J. K. Asbóth, P. Horak, T. Freegarde  
Scattering theory of cooling and heating in optomechanical systems  
*Physical Review A* 79, 053810 (2009)
42. G. Szirmai, D. Nagy, **P. Domokos**  
Excess Noise Depletion of a Bose-Einstein Condensate in an Optical Cavity  
*Physical Review Letters* 102, 080401 (2009)
43. D. Nagy, G. Szirmai, **P. Domokos**  
Self-organization of a Bose-Einstein condensate in an optical cavity  
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44. J. K. Asbóth, H. Ritsch, **P. Domokos**  
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45. B. L. Lev, A. Vukics, E. R. Hudson, B. C. Sawyer, **P. Domokos**, H. Ritsch, J. Ye  
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46. G. Szirmai, **P. Domokos**  
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Physical Review Letters 99, 213602-1–4 (2007)
47. J. K. Asbóth, **P. Domokos**  
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48. J. K. Asbóth, H. Ritsch, **P. Domokos**  
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49. D. Nagy, **P. Domokos**  
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50. C. Maschler, H. Ritsch, A. Vukics, **P. Domokos**:  
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51. D. Nagy, J. K. Asbóth, **P. Domokos**:  
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53. J. K. Asbóth, **P. Domokos**, H. Ritsch, and A. Vukics:  
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58. J. Asbóth, **P. Domokos**, and H. Ritsch:  
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69. **P. Domokos** and H. Ritsch:  
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70. **P. Domokos**, T. Kiss, and J. Janszky:  
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71. **P. Domokos**, P. Horak and H. Ritsch:  
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77. S. Szabo, **P. Domokos**, P. Adam, J. Janszky:  
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87. J. Janszky, **P. Domokos**, S. Szabo, P. Adam:  
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*Physical Review A* 51, 4191-4193 (1995);
88. **P. Domokos**, P. Adam, J. Janszky:  
One-dimensional coherent-state representation on a circle in phase space  
*Physical Review A* 50, 4293-4297 (1994);

89. **P. Domokos**, J. Janszky, P. Adam:  
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92. J. Janszky, **P. Domokos**, P. Adam:  
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### Proceedings, book parts, lecture notes

1. P. Domokos, A. Xuereb, P. Horak and T. Freegarde  
Efficient optomechanical cooling in one-dimensional interferometers  
Proc. SPIE Vol. 7951, 79510B (2011); doi:10.1117/12.880045
2. Marco Wilzbach, **Peter Domokos**, Thomas Fernholz, Ron Folman, Sönke Groth, Albrecht Haase, Christian Hock, Peter Horak, Bruce Klappauf, Michael Schwarz, and Jörg Schmiedmayer:  
Integration of light and atom optics on an atom chip  
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3. T. Kiss, P. Domokos, J. Janszky:  
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4. Helmut Ritsch, **Peter Domokos**, Peter Horak, Markus Gangl:  
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5. M. Gangl, P. Horak, **P. Domokos**, and H. Ritsch:  
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6. **P. Domokos**, M. Brune, J. M. Raimond, S. Haroche:  
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7. J. Janszky, P. Adam, S. Szabo, **P. Domokos**:  
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11. J. Janszky, P. Adam, I. Földesi, **P. Domokos**:  
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### Papers in Hungarian

1. Domokos Péter:  
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2. Domokos Péter:  
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3. Domokos Péter:  
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4. P. Domokos:  
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