

Professor Natalia Berloff

Publications:

19. N.G. Berloff, K.Kalinin, M. Silva, W. Langbein, and P.G. Lagoudakis "*Realizing the XY Hamiltonian in polariton simulators,*" in review with Nature Materials, ArXiv:1607.06065 (2016)
18. I.A. Pshenichnyuk and N.G. Berloff "*Inelastic scattering of xenon atoms by quantized vortices in superfluids,*" in review with Phys. Rev. B, ArXiv:1608.04157 (2016)
17. H. Ohadi, R. L. Gregory, T. Freearde, Y. G. Rubo, A. V. Kavokin, N. G. Berloff, and P. G. Lagoudakis, "*Nontrivial phase coupling in polariton multiplets,*" Phys. Rev. X **6**, 031032 (2016)
16. A. Askitopoulos, K. Kalinin, T.C.H.Liew, P. Cilibrizzi, Z. Hatzopoulos, P. G. Savvidis, N. G. Berloff, and P. G. Lagoudakis, "*Nonresonant optical control of a spinor polariton condensate*" Phys. Rev. B **93**, 205307, (2016)
15. H.Salman, N.G.Berloff, and S.O. Demokritov, "*Microscopic Theory of Bose-Einstein Condensation of Magnons at Room Temperature,*" "Universal Themes of Bose-Einstein Condensation", Cambridge University Press, (2016)
14. Gabriel Christmann, Guilherme Tosi, Natalia G Berloff, Panagiotis Tsotsis, Peter S Eldridge, Zacharias Hatzopoulos, Pavlos G Savvidis, Jeremy J Baumberg "*Oscillatory solitons and time-resolved phase locking of two polariton condensates,*" New Journal of Physics, **16** (10), 103039 (2014)
13. A Dreismann, P Cristofolini, R Balili, G Christmann, F Pinsker, N G Berloff, Z Hatzopoulos, P G Savvidis, J. J. Baumberg, "*Coupled counter-rotating polariton condensates in optically defined annular potentials,*" 111(24):8770-5 Proceedings of National Academy of Sciences, USA (2014)
12. N.G.Berloff, Marc Brachet, and N. Proukakis "*Modeling quantum fluid dynamics at nonzero temperatures,*" 111, 4675--4682, Proceedings of National Academy of Sciences, USA (2014)
11. F. Pinsker and N.G. Berloff, "*Transitions and excitations in a superfluid stream passing small impurities,*" **89**, 053605, Physical Review A, arXiv:1401.1517 (2014)
10. F. Pinsker, N.G.Berloff and V. Perez-Garcia, "*Nonlinear quantum piston for the controlled generation of vortex rings and soliton trains,*" Physical Review A, **87**(5), 053624, (2013).
9. P. Cristofolini, A. Dreismann, G. Christmann, G. Franchetti, N.G. Berloff, P. Tsotsis, Z. Hatzopoulos, P.G. Savvidis, J.J. Baumberg "*Optical superfluid phase transitions and trapping of polariton condensates,*" Physical Review Letters, **110** , 186403 (2013).
8. N.G.Berloff and J.Keeling, "*Universality in modelling non-equilibrium polariton condensates,*" book chapter in "Quantum Fluids: hot-topics and new trends", eds. A. Bramati and M. Modugno, Springer &Verlag, (2013).
7. G. Franchetti, N.G. Berloff, J.J. Baumberg "*Exploiting quantum coherence of polaritons for ultra sensitive detectors,*", arXiv:1210.1187 (2012)
6. G. Tosi, G. Christmann, N. G. Berloff, P. Tsotsis, T. Gao, Z. Hatzopoulos, P. G. Savvidis, J. J. Baumberg "*Geometrically locked vortex lattices in semiconductor quantum fluids,*" Nature Communications, **3** , 1243 (2012)
5. P. Nowik-Boltyk, O. Dzyapko, V. E. Demidov, N.G. Berloff and S. O. Demokritov "*Spatially non-*

uniform ground state and quantized vortices in a two-component Bose-Einstein condensate of magnons ", Nature Sci. Reps., **2**, 482 (2012)

4. M. O. Borgh, G. Franchetti, J. Keeling and N. G. Berloff, "*Robustness and observability of rotating vortex-lattices in an exciton-polariton condensate*", Phys. Rev. B **86**, 035307 (2012)

3. G. Tosi, G. Christmann, N.G. Berloff, P. Tsotsis, T. Gao, Z. Hatzopoulos, P.G. Savvidis, J.J. Baumberg, "*Sculpting oscillators with light within a nonlinear quantum fluid*", *Nature Physics*, **8**, 190-194 (2012)

2. L. Warszawski, A. Melatos, and N. G. Berloff "*Unpinning triggers for superfluid vortex avalanches*" *Physical Review B*, **85**, 104503 (2012)

1.G. Christmann, G. Tosi, N. G. Berloff, P. Tsotsis, P.S. Eldridge, Z. Hatzopoulos, P. G. Savvidis, J. J. Baumberg, "*Polariton ring condensates and sunflower ripples in an expanding quantum liquid*" Phys. Rev. B **85**, 235303 (2012)