Abstract Submitted
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Nonlinear Phenomena in Bose-Einstein condensates[1] LINCOLN D. CARR, Department of Physics, Colorado School of Mines — We present a medley of results from the last three years on nonlinear phenomena in BECs [1]. These include exact dynamics of multi-component condensates in optical lattices [2], vortices and ring solitons [3], macroscopic quantum tunneling [4], nonlinear band theory [5], and a pulsed atomic soliton laser [6]. 1. *Emergent Nonlinear Phenomena in Bose-Einstein Condensates: Theory and Experiment*, ed. P. G. Kevrekidis, D. J. Frantzeskakis, and R. Carretero-Gonzalez (Springer-Verlag, to appear, 2008) – see L. D. Carr and Joachim Brand, e-print arXiv:0705.1139 (2007); Joachim Brand, L. D. Carr, B. P. Anderson, e-print arXiv:0705.1341 (2007). 2. R. Mark Bradley, James E. Bernard, and L. D. Carr, e-print arXiv:0711.1896 (2007). 3. G. Herring, L. D. Carr, R. Carretero-Gonzalez, P. G. Kevrekidis, D. J. Frantzeskakis, e-print arXiv:0709.2193 (2007); L. D. Carr and C. W. Clark, Phys. Rev. A v. 74, p.043613 (2006); L. D. Carr and C. W. Clark, Phys. Rev. Lett. v. 97, p.010403 (2006). 4. L. D. Carr, M. J. Holland, and B. A. Malomed, J. Phys. B: At. Mol. Opt. Phys., v.38, p.3217 (2005) 5. B. T. Seaman, L. D. Carr, and M. J. Holland, Phys. Rev. A, v. 71, p.033622 (2005). 6. L. D. Carr and J. Brand, Phys. Rev. A, v.70, p.033607 (2004); L. D. Carr and J. Brand, Phys. Rev. Lett., v.92, p.040401 (2004).

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Lincoln Carr
Colorado School of Mines

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