

Publication List – Ananth P. Chikkatur

Papers (in refereed journals)

1. A.P. Chikkatur, Y. Shin, A.E. Leanhardt, D. Kielpinski, E. Tsikata, T.L. Gustavson, D.E. Pritchard, and W. Ketterle:
A continuous source of Bose-Einstein condensed atoms.
Submitted to Science (2002).
2. A.E. Leanhardt, A.P. Chikkatur, D. Kielpinski, Y. Shin, T.L. Gustavson, D.E. Pritchard, and W. Ketterle:
Propagation of Bose-Einstein condensates in a magnetic waveguide.
Submitted to Phys. Rev. Lett. Pre-print cond-mat/0203214 (2002).
3. T.L. Gustavson, A.P. Chikkatur, A.E. Leanhardt, A. Görlitz, S. Gupta, D.E. Pritchard, and W. Ketterle:
Transport of Bose-Einstein Condensation using Optical Tweezers.
Phys. Rev. Lett. **88**, 020401 (2002).
4. A. Görlitz, J.M. Vogels, A.E. Leanhardt, C. Raman, T.L. Gustavson, J.R. Abo-Shaeer, A.P. Chikkatur, S. Gupta, S. Inouye, T.P. Rosenband, D.E. Pritchard, and W. Ketterle:
Realization of Bose-Einstein condensates in lower dimensions.
Phys. Rev. Lett., **87** 130402 (2001).
5. S. Inouye, S. Gupta, T. Rosenband, A.P. Chikkatur, A. Görlitz, T.L. Gustavson, A.E. Leanhardt, D.E. Pritchard, and W. Ketterle:
Observation of vortex phase singularities in Bose-Einstein condensates.
Phys. Rev. Lett., **87** 080402 (2001).
6. A. Görlitz, A.P. Chikkatur, and W. Ketterle:
Enhancement and suppression of spontaneous emission and light scattering by quantum degeneracy.
Phys. Rev. A **36**, 041601(R) (2001).
7. R. Onofrio, C. Raman, J. M. Vogels, J. Abo-Shaeer, A. P. Chikkatur, and W. Ketterle:
Observation of Superfluid Flow in a Bose-Einstein Condensed Gas.
Phys. Rev. Lett. **85**, 2228 (2000).
8. A.P. Chikkatur, A. Görlitz, D.M. Stamper-Kurn, S. Inouye, S. Gupta, and W. Ketterle:
Suppression and enhancement of impurity scattering in a Bose-Einstein condensate.
Phys. Rev. Lett. **85**, 483 (2000).
9. S. Inouye, T. Pfau, S. Gupta, A. P. Chikkatur, A. Görlitz, D.E. Pritchard, and W. Ketterle:
Observation of phase-coherent amplification of atomic matter waves.
Nature **402**, 641-644 (1999).
10. J. Stenger, S. Inouye, D.M. Stamper-Kurn, A.P. Chikkatur, D.E. Pritchard, and W. Ketterle:
Bragg spectroscopy and superradiant Rayleigh scattering in a Bose-Einstein condensate.
Appl. Phys. B **69**, 347-352 (1999).
11. D.M. Stamper-Kurn, A.P. Chikkatur, A. Görlitz, S. Inouye, S. Gupta, D.E. Pritchard, and W. Ketterle:
Excitation of phonons in a Bose-Einstein condensate by light scattering.
Phys. Rev. Lett. **83**, 2876-2879 (1999).
12. S. Inouye, A.P. Chikkatur, D.M. Stamper-Kurn, J. Stenger, D.E. Pritchard, and W. Ketterle:
Superradiant Rayleigh scattering from a Bose-Einstein condensate.
Science **285**, 571-574 (1999).
13. D.M. Stamper-Kurn, H.-J. Miesner, A.P. Chikkatur, S. Inouye, J. Stenger, and W. Ketterle:
Quantum tunneling across spin domains in a Bose-Einstein condensate.
Phys. Rev. Lett. **83**, 661-665 (1999).
14. J. Stenger, S. Inouye, A.P. Chikkatur, D.M. Stamper-Kurn, D.E. Pritchard, and W. Ketterle:
Bragg spectroscopy of a Bose-Einstein condensate.
Phys. Rev. Lett. **82**, 4569-4573 (1999).

15. H.-J. Miesner, D.M. Stamper-Kurn, J. Stenger, S. Inouye, A.P. Chikkatur, and W. Ketterle:
Observation of metastable states in spinor Bose-Einstein condensates.
Phys. Rev. Lett. **82**, 2228-2231 (1999).
16. J. Stenger, D.M. Stamper-Kurn, M.R. Andrews, A.P. Chikkatur, S. Inouye, H.-J. Miesner, and W. Ketterle:
Optically confined Bose-Einstein condensates.
Proceedings of the Symposium on "Quantum Fluids and Solids" (QFS 98), Amherst, Massachusetts, June 9-14, 1998.
J. Low Temp. Phys. **113**, 167-188 (1998).
17. J. Stenger, S. Inouye, D.M. Stamper-Kurn, H.-J. Miesner, A.P. Chikkatur, and W. Ketterle:
Spin domains in ground state spinor Bose-Einstein condensates.
Nature **396**, 345-348 (1998).
18. D.M. Stamper-Kurn, H.-J. Miesner, A.P. Chikkatur, S. Inouye, J. Stenger, and W. Ketterle:
Reversible formation of a Bose-Einstein condensate.
Phys. Rev. Lett. **81**, 2194-2197 (1998).
19. D.M. Stamper-Kurn, M.R. Andrews, A.P. Chikkatur, S. Inouye, H.-J. Miesner, J. Stenger, and W. Ketterle:
Optical confinement of a Bose-Einstein condensate.
Phys. Rev. Lett. **80**, 2027-2030 (1998).
20. A.P. Chikkatur, et. al. (NuTeV/CCFR collaboration):
Tests of a calorimetric technique for measuring the energy of cosmic ray muons in the TeV energy range.
Z. Phys. C. **74**, 279-289 (1997).

Articles in Proceedings

21. W. Ketterle, A.P. Chikkatur, and C. Raman:
Collective enhancement and suppression in Bose-Einstein condensates.
in: Atomic Physics 17, edited by E. Arimondo, P. DeNatale, and M. Inguscio (American Institute of Physics, Melville, New York, 2001), pp. 337-355; e-print cond-mat/0010375
22. D.M. Stamper-Kurn, A.P. Chikkatur, A. Görlitz, S. Gupta, S. Inouye, J. Stenger, D.E. Pritchard, and W. Ketterle:
Probing Bose-Einstein condensates with optical Bragg scattering
in: *Recent Progress in Many-Body Theories*, R.F. Bishop, K.A. Gernoth, N.R. Walet, and Y. Xian eds. (World Scientific, 2000); Int. J. Mod. Phys. B **15**, 1621-1640 (2001).

Invited presentations

23. *The Bose-Einstein Condensate: A Superfluid gas of coherent atoms:*
Invited talks at:
 - a) Indian Institute of Science, Bangalore, India (December 12, 2001).
 - b) Indian Institute of Astrophysics, Bangalore, India (December 24, 2001).
 - c) Indian Institute of Technology-Bombay, Mumbai, India (January 4, 2002).
 - d) Tata Institute of Fundamental Research, Mumbai, India (January 7, 2002).
24. *Impurity Collisions and Superfluidity:*
Invited talk, The Third Workshop on Laser Cooling, Shonan Village Center, Japan, January 2001.
25. *Spinor Bose-Einstein condensates: Ground states, metastability, and quantum tunneling,*
Invited talk, RTC and ITAMP Workshop on Multi-Component and Spinor Bose-Einstein Condensates of Trapped Dilute Vapors, Rochester, 1/6-8/2000, Book of Abstracts, p. 9.

Selected contributions to conferences with published abstracts

26. *Experiments with Transported Bose-Einstein Condensates,*
A. P. Chikkatur, T. L. Gustavson, A. Görlitz, S. Gupta, A. E. Leanhardt, S. Inouye, T. P. Rosenband, D. E. Pritchard and W. Ketterle,
Euresco Conference on the Physics of Atomic Gases at Low Temperatures, San Feliu de Guixols, Spain, September 15-20, 2001, Book of Abstracts.

27. *Transported Bose-Einstein Condensates*,
A.P. Chikkatur, S. Gupta, S. Inouye, A.E. Leanhardt, A. Görlitz, T.L. Gustavson, T.L. Rosenband, D.E. Pritchard and W. Ketterle,
15th International Conference on Laser Spectroscopy, Snowbird, Utah, June 10-15, 2001 (ICOLS 01), Book of Abstracts, page P1-2.
28. *1 and 2 dimensional Bose-Einstein Condensates*,
J. Vogels, A. Görlitz, C. Raman, T. Gustavson, M. Drndic, A. Leanhardt, J. Abo-Shaeer, R. Loew, and W. Ketterle,
Bull. Am. Phys. Soc. **46**, 48 (2001).
29. *Impurity scattering in a Bose-Einstein Condensate*
A. Chikkatur, A. Görlitz, D.M. Stamper-Kurn, S. Inouye, S. Gupta, D. Pritchard and W. Ketterle,
Bull. Am. Phys. Soc. **45**, 48 (2000).
30. *Suppression and enhancement of impurity scattering in a Bose-Einstein condensate*,
A.P. Chikkatur, A. Görlitz, D.M. Stamper-Kurn, S. Inouye, S. Gupta, and W. Ketterle,
Technical Digest of Quantum Electronics and Laser Science conference (QELS 2000), post deadline paper QPD 2-1/3.
31. *Putting a spin on BEC: Ground states, metastability and tunneling*,
D.M. Stamper-Kurn, J. Stenger, H.-J. Miesner, S. Inouye, A.P. Chikkatur, and W. Ketterle,
Bull. Am. Phys. Soc. **44**, 1007 (1999).
32. *Studies of optically confined Bose-Einstein condensates*,
D.M. Stamper-Kurn, M.R. Andrews, A.P. Chikkatur, S. Inouye, H.-J. Miesner, J. Stenger, and W. Ketterle,
Bull. Am. Phys. Soc. **43**, 1251 (1998).
33. *Development of a new technique for measuring the energies of Cosmic Ray Muons in the TeV energy range*,
Ananth P. Chikkatur, Bulletin of the American Physical Society, Indianapolis IN, May 1996.