

Ph195c readings for 6 and 8 May 2002

For monday:

Please look up the definition of *scattering length* in your favorite QM text. What is the difference between positive and negative scattering length?

"Bose-Einstein condensation of atomic gases," Nature **416**, 211 - 218 (14 Mar 2002).

"Bose-Einstein Condensation in a Gas of Sodium Atoms," Phys. Rev. Lett. **75**, 3969-3973 (1995).

"Onset of Fermi Degeneracy in a Trapped Atomic Gas," Science 1999 September 10; **285**: 1703-1706.

"Dynamics of collapsing and exploding Bose-Einstein condensates," Nature **412**, 295 - 299 (19 Jul 2001).

For wednesday:

"Formation and Decay of Vortex Lattices in Bose-Einstein Condensates at Finite Temperatures," Phys. Rev. Lett. **88**, 070409 (2002).

"Two-Species Mixture of Quantum Degenerate Bose and Fermi Gases," Phys. Rev. Lett. **88**, 160401 (2002).

"Quantum phase transition from a superfluid to a Mott insulator in a gas of ultracold atoms," Nature **415**, 39 - 44 (03 Jan 2002).