



SFB/TRR 21 - Seminar

4. Juni 2014, Tübingen

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Bosonic enhancement of spontaneous emission near an interface

We show how the spontaneous emission rate of an excited two-level atom placed in a trapped Bose-Einstein condensate of ground-state atoms is enhanced by bosonic stimulation. This stimulation depends on the overlap of the excited matter-wave packet with the macroscopically occupied condensate wave function, and provides a probe of the spatial coherence of the Bose gas. The effect can be used to amplify the distance-dependent decay rate of an excited atom near an interface.

Reference: J. Schiefele and C. Henkel, Phys. Lett. A 375 (2011), 680-684

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