

## **High-resolution spectroscopy of ultracold Ytterbium atoms on the clock transition**

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I will describe our experimental results on spectroscopy with quantum-degenerate bosonic gases. In the experiment, a gas of bosonic Ytterbium atoms is probed by exciting an ultra-narrow optical transition (the “clock transition”) linking the ground state to a metastable excited state. I will preliminary spectroscopy experiments of Bose-Einstein condensates (BEC) and thermal gases, which allows to determine the scattering parameters; and the observation of coherent Rabi oscillations between a BEC in the ground state and in the excited state. Elastic and inelastic interaction result in a damping of these oscillations, in analogy with the basic problem in quantum optics of a discrete level coupled to a continuum.

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