CRETE CENTER FOR
QUANTUM COMPLEXITY
AND NANOTECHNOLOGY

ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ & ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ/
CCQCN SEMINAR

Thursday, 15 May 2014

15:00-16:30

1st Floor Fermi Room

Review course on how to levitate atoms in a magnetic and/or optical fields

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&
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Abstract

This course is dedicated to students or researchers that want to know more about ultra-cold atoms and techniques used to levitate them. I will review the basics for trapping atoms which is currently used to create a cold gas such as a Bose-Einstein condensate (cfr. Prof. von Klitzing's experiment).
Concepts taught include nuclear spin and electron spin, hyperfine interaction in Na and Rb, hyperfine structure calculations (spin algebra) in presence of a magnetic field, Larmor frequency, low-and high field seeking states.
Although it is impossible to create a local maximum magnetic field, it is nevertheless possible to trap the atoms from the adiabatic spin dynamics of the atoms. Examples of such traps include quadrupole trap, top trap, Ioffe Pritchard trap.

Everyone interested is welcome

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