Titulo:

"Optical Nanofibers: A platform for quantum optics"

Coloquialista:

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Resumo:

Nanofibers produced by tapering an ordinary single mode optical fiber to diameters of half a micron are interesting optical objects. Evanescent fields, with large gradients, develop as the radius reaches less than the wavelength of light posing puzzles, questions, and opportunities. The geometry of the nanofiber mode allows for study of quantum optical effects in a one-dimensional configuration, with the preferential evanescent mode of fiber accessible when good adiabatic geometry allows high coupling back into the single mode fiber.

Recent experiments with cold Rb atoms around the nanofiber include the modification of the lifetime of the D2 line in the presence of the nanofiber and its relation to the single atom
coupling. We find that the modification of the lifetime depends on the alignment of the dipole with respect to the nanofiber: along, parallel, or perpendicular. We also observe collective effects, subradiance, in the decay from the atomic excited state that depend on the number of atoms interacting in the evanescent mode of the nanofiber.

Data, horário e local:

18 de Novembro de 2016, (sexta-feira) 16h

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