



CONSIGLIO NAZIONALE DELLE RICERCHE
ISTITUTO NAZIONALE DI OTTICA

AVVISO DI SEMINARIO

Il giorno giovedì 21 novembre 2013 alle ore 11,00
presso l'Area della Ricerca CNR di Pisa
Aula 44, primo piano, Edificio "A"

// Dr. Mario AGIO

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terrà un seminario sul tema:

Nano-optics, spectroscopy and quantum (optics)

The dramatic advances of nanotechnology experienced in recent years enabled us to fabricate optical nanostructures that greatly enhance the conversion of localized electromagnetic energy into radiation and vice versa. These offer the required improvements in terms of bandwidth, interaction strength and resolution for combining ultrafast spectroscopy, nano-optics and quantum optics to fundamentally push forward the possibility of the coherent optical access on individual nanostructures or even molecules above cryogenic temperatures, where dephasing processes typically occur at very short time scales. In this context, we discuss recent progress in the theoretical description of light-matter interaction at the nanoscale and related experimental findings. Moreover, we present concrete examples in support of our vision and propose a series of experiments that aim at exploring novel promising regimes of optical coherence and quantum optics in advanced spectroscopy. We envisage extensions to ultrafast and nonlinear phenomena, especially in the direction of multidimensional nanoscopy.