



AVVISO DI SEMINARIO

Il giorno martedì 11 ottobre 2016 alle ore 11,30
presso l'Area della Ricerca CNR di Pisa, Aula 33, piano Terra, Edificio "A"

la Prof.ssa Donatella CIAMPINI

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terrà un seminario sul tema:

Optical cavity cooling and non-linear dynamics of a functionalized silicon nitride membrane

Abstract.

Optomechanics is a rapidly expanding field focused on the interaction between light and mechanical motion of a resonator. We investigate the optomechanical properties of a cavity containing, as a mirror, a multilayer membrane composed by the molecular organic semiconductor tris(8-hydroxyquinoline) aluminum (Alq₃), silver and silicon nitride. Optical back-action effects associated with confined electromagnetic modes in an optical cavity are used to decrease the mechanical energy of the modes, showing promise for both applications and fundamental investigation. Non-linear dynamics and multi-stable regions arise when the mechanical modes are heated. We study the stability of the system using a model in which the response of the photo-induced forces to changes in the cavity field is described by a delay function.