



CONFÉRENCE ISMO

Juan José SAENZ

Ikerbasque Research Professor, DIPC - Donostia International Physics Center

Optical forces on small particles: From optical tweezers to light induced “Mock-Gravity” interactions

Appropriate combinations of laser beams can be used to trap and manipulate small particles with “optical tweezers” as well as to induce significant “optical binding” forces between particles.

Optical forces between small particles are usually strongly anisotropic depending on the interference landscape of the external fields. This is in contrast with the familiar isotropic van der Waals-Casimir-Lifshitz interactions between neutral bodies arising from random electromagnetic waves generated by equilibrium quantum and thermal fluctuations.

We will discuss how non-equilibrium randomly fluctuating light fields can be used to induce and control isotropic, translational invariant, dispersion forces between small colloidal particles. When the light frequency is tuned near an absorption resonance, the interaction forces between particles follow a long-range gravity like inverse square distance law.

Mardi 24 mars 2020 à 9h30
Amphithéâtre du bât 520 (3^{ème} étage)
Université Paris-Sud - 91405 ORSAY Cedex

HORAIRE INHABITUEL

La conférence sera suivie d'une collation dans le hall de l'ISMO pour poursuivre la discussion de manière informelle.