Title: Cavity Optomechanics

Abstract: The field of cavity optomechanics deals with a family of systems, each is composed of two coupled elements. The first one is a mechanical resonator, commonly having low damping rate, and the second one is an ancila system, which is typically externally driven. The talk will be devoted to two novel optomechanical systems: an on-fiber optomechanical cavity and a mechanical opto-microwave cavity. Both systems exhibit several back-action effects such as mode cooling and self-excited oscillations. Applications in metrology will be discussed and directions for future research will be outlined.