NITheP cordially invites you to a seminar by:

Prof. Leonardo A. Pachon

*Universidad de Antioquia*

Date: Tuesday, 28th April 2015

Time: 14h15 – 15h15

Venue: NITheP Seminar Room, H-Block, 3rd Floor

**TITLE: Quantum coherence, control and collective dynamics of open quantum systems.**

**ABSTRACT:**

By introducing the notion of non-Markovianlly scaled time/energy scales, I will discuss the role of non-Markovian dynamics in the survival of quantum correlations in driven out-of-equilibrium and thermal equilibrium scenarios. I will also discuss applications of these ideas in biologically-inspired systems and nano mechanical resonators. Specifically, I will elaborate on (i) the role of non-Markovian dynamics in supporting one-photon phase control and (ii) the interplay between optimally modulated driving fields and structured environment in nano-optomechanical systems. Time permitting, I will discuss how the theory of open quantum systems can be utilized to derive quantum equations of motion that describe classical collective phenomena such as synchronization.