

# *Chez Pierre*

Presents ...

**Thursday, February 18, 2016**

**10:00am**

**MIT Room 4-331**

**Special Chez Pierre Seminar**

**Alejandro Rodriguez**

Princeton University

## ”Non-equilibrium electromagnetic fluctuations in nano-structured media“

Quantum and thermal fluctuations of charges and electromagnetic fields play an important role in many fundamental physical processes, including thermal radiation, van der Waals interactions, and heat transport, among other incandescence and luminescence phenomena. In this talk, I will describe recent progress in our understanding of the many ways in which nano-structured surfaces can fundamentally alter electromagnetic fluctuations. These include generalizations of classical blackbody physics to nonlinear materials structured at the scale of the thermal wavelength, fundamental limits to heat exchange between objects at nanometric separations, and strong modifications to the thermal radiation and conductive properties of both passive and active nano-structured materials subject to thermal and dielectric gradients.

