

# *Chez Pierre*

Presents ...

**Friday, March 25, 2016**

**10:00AM**

**MIT Room 4-331**

## **Special Chez Pierre Seminar**

**Jeroen van den Brink**

Leibniz Institute IFW Dresden, Germany

” Resonant Inelastic X-ray Scattering on high  $T_c$  cuprates and magnetic iridates“

Resonant Inelastic X-ray Scattering (RIXS) provides direct access to elementary charge, spin and orbital excitations in complex oxides. As a technique it has made tremendous progress with the advent high-brilliance synchrotron X-ray sources. From the theoretical perspective the fundamental question is to precisely which low-energy correlation functions RIXS is sensitive. Depending on the experimental RIXS setup, the measured charge dynamics can include charge-transfer, phonon, d-d and orbital excitations [1]. The focus of this talk will be on RIXS as a probe of spin dynamics and superconducting gap of high- $T_c$  cuprates [2-4] and the combined magnetic and orbital modes in strongly spin-orbit coupled iridium-oxides [5-7].

[1] L. Ament et al., RMP 83, 705 (2011). [2] L. Braicovich et al., PRL 104, 077002 (2010). [3] M. Dean et al., Nat. Mat. 11, 850 (2012). [4] P. Marra et al., PRL 110, 117005 (2013). [5] J. Kim et al., PRL 108, 177003 (2012). [6] H. Gretarsson et al., PRL 110, 076402 (2013). [7] A. Lupascu et al., PRL 112, 147201 (2014).

