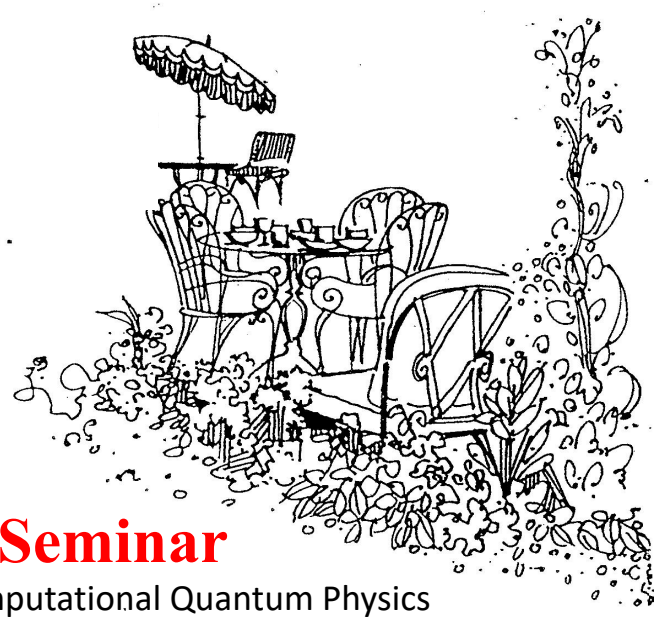
Chez Pierre

Presents ...

Monday, March 18, 2019

12:00pm Noon

MIT Room 4-331



Chez Pierre Seminar

Antoine Georges – Center for Computational Quantum Physics
Flatiron Institute - Simons Foundation, New York,
and Collège de France, Paris

"Strong Correlations in Multi-Orbital Materials: Beyond Mottness. "

Multi-band/multi-orbital materials such as transition-metal oxides, iron superconductors or twisted bilayer systems offer a fertile platform for exploring the physics of strong electronic correlations. In this context, the interplay of the `Hubbard U' with Hund's rule and spin-orbit coupling, as well as orbital differentiation, lead to rich physics beyond the paradigmatic 'Mottness'. In recent years, the concept of `Hund's metals has emerged and has successfully explained the properties of iron superconductors and ruthenates. In this talk, I will consider mostly Sr_2RuO_4 – an amazing material which can serve as a *precision laboratory* for many-body physics. I will report on very recent high-resolution ARPES experiments which allow to put the Dynamical Mean-Field Theory framework to a direct test, review how Hund's coupling is responsible for strong correlations in this material and emphasize the importance of spin-orbit coupling.

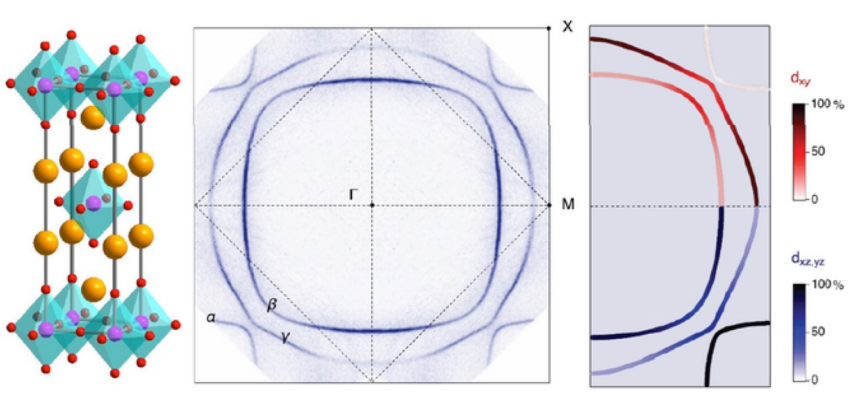


Figure credit : Tamai et al. arXiv :1812.06531