

**Wednesday, January 30<sup>th</sup>, 2019 - 14:00**  
 CFEL-bldg. 99, seminar rooms I-III

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## Strain, lattice distortions and the metal-insulator transition in correlated electron materials

Correlation-driven metal-insulator transitions are typically coupled strongly both to local (octahedral distortion) and long wavelength (strain) lattice distortions. I present a theory of the intertwined electronic and lattice transitions in correlated materials, and show how it accounts for phenomena ranging from the interplay between nematic and magnetic ordering in pnictide superconductors, to the strain and current dependence of the metal insulator transitions in  $\text{Ca}_2\text{RuO}_4$  and  $\text{Ca}_3\text{Ru}_2\text{O}_7$  and superlattice effects in the rare earth nickelates.

### Stripes at the metal-insulator interface in $\text{Ca}_2\text{RuO}_4$ : Experiment and Theory

