Condensed Matter Theory Center Seminar

Tuesday, March 17
11:00 am – 12:00 pm
2205 Toll Physics Building

David Abergel

Nordita

"Tunneling conductance in strongly correlated materials"

Tunneling conductance measurements such as two-terminal transport and scanning tunneling microscopy are important tools for the characterization of condensed matter systems. However, for strongly correlated materials, the tunneling mechanism has not yet been theoretically reproduced or adequately explained. This is because the combination of strong electron-electron interactions and the non-equilibrium nature of the problem is poorly understood. In this talk, we show that a new theory for the tunneling conductance for strongly correlated systems can reproduce all the features of experimental data for many different materials, and show explicit comparisons for a wide variety of materials. In particular, our theory gives a quantitative fit and a qualitative explanation for the side peaks which are present in many different experimental data, but which are not explained by any prior theory.

Host: Jay Sau

Web: http://www.physics.umd.edu/cmtc/seminars.html

(All are welcome to attend)

physics University of Maryland