Chez Pierre

Presents ...

Special Chez Pierre Seminar

Leonid Glazman, Yale University

"Disorder in Andreev reflection of a quantum Hall edge".

We develop a theory of charge transport along the quantum Hall edge proximitized by a "dirty" superconductor. Disorder randomizes the Andreev reflection rendering the conductance of a proximitized segment a stochastic quantity. We investigate the statistical distribution of the conductance in two types of systems: a single nu=2 proximitized edge, and two counter-propagating, proximity-coupled nu=1 edges. In the latter case, the system is self-tuned to the critical point between trivial and topological phases by the competition between tunneling processes with or without particle-hole conversion. We investigate the effects of electron density, magnetic field, and temperature on the conductance distribution function.