CU Physics Department Colloquium

Monday, October 12, 2009 4:10 PM 428 Pupin Hall

Leonid Glazman, Yale University

NONLINEAR LUTTINGER LIQUIDS

One-dimensional quantum fluids are usually described within the Luttinger liquid theory. This theory simplifies a real system by replacing the true spectrum of its particles with a linear one. Abandoning the simplification has proven to be difficult. This talk describes a breakthrough which allows one to evaluate the dynamic responses of a non-linearized fluid. The hallmark of the new theory is a set of new universal singularities of the dynamic response functions. It is applicable to a diverse group of systems, including, for example, electrons in quantum wires and cold atomic gases in one-dimensional traps.

Hosted by Boris Altshuler - Meet the Speaker at 1:30 PM in 705 Pupin Hall