1085-81-134 **Sven Bachmann*** (svenbac@math.ucdavis.edu), Dept of Mathematics, University of California, Davis, One Shields Ave, Davis, CA 95616, and **Wojciech De Roeck** and **Maximilian Butz**. *On the diffusive regime of disordered quantum wires.*

If the length of a disordered metallic wire is shorter than its localization length, currents can flow. This regime is most conveniently studied in a weak coupling limit, where the strength of the disorder vanishes as the wire's length increases. In this talk, I will describe the transport properties of such a quantum wire through its transfer matrix. As a function of the wire's length, it satisfies a stochastic differential equation, which implies in particular Ohm's law for the conductance in the appropriate thick wire limit. (Received September 06, 2012)