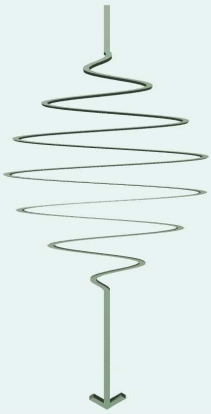


February 6th, 2012 - 14:30 pm

Seminar Room 108, DESY Bldg. 49



Max Planck
Research
Department
for
**Structural
Dynamics**



SEMINAR

Marcin Mierzejewski

University of Silesia, Poland

Nonlinear current response of interacting fermions

Nonlinear real-time response of interacting particles will be discussed on the example of a one-dimensional tight-binding model of spinless fermions driven by strong electric field.

It will be demonstrated that for a generic (metallic or insulating) systems at high temperatures the major nonlinear effects can be accounted by internal heating.

For such quasiequilibrium evolution a simple extension of the linear response theory allows one to calculate the real-time current without a formal solution of the real-time problem. For stronger electric field this quasiequilibrium regime terminates and the Bloch oscillations set on.

The anomalous nonlinear response of the integrable systems will also be briefly discussed.



Host: Martin Eckstein, MPSD-THEO, CFEL