

## Report on the Workshop

# INTERACTION AND INTERFERENCE IN NANOSCOPIC TRANSPORT

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Following its emergence in the early 1980's, the field of mesoscopic physics has reached a level of maturity in the late 1990's. The new phase of this field saw (1) its merger with topics taken from the discipline of strongly correlated electrons and (2) the emergence of new exciting research topics, including spintronics, noise and fluctuations, quantum statistics, quantum computation, and systems with exotic spectra such as Luttinger liquids and graphene. The new discipline is often related to as nanoelectronics.

The idea of the workshop held at the MPIPKS from February 18 - 23, 2008 was to bring together experts in the field of nanoelectronics, covering a broad range of topics. The key words "interaction" and "interference" represent the input brought from the more traditional fields of strongly correlated electrons and mesoscopics, respectively.

The program consisted of 35 invited talks and about 50 poster contributions, presented by participants from 18 different countries. Originally, this workshop was strongly oversubscribed, attesting to the wide interest in the chosen topic. Junior scientists had to be selected according to their achievement so far and recommendations. Almost all of them used their opportunity to present their work in one of the two poster sessions. The latter were of very high quality and stimulated long and lively discussions until late in the evening. The young participants were also actively participating in the extensive discussion sessions that followed each talk.

The message of the workshop was clear - the merger of the two disciplines alluded to above, and the range of exciting challenges, define a fast moving and lively field. Many talks underlined the close contact between theory and experiment. It is clear that regular meetings in this field are the call of the day.