

# MECCANICA

A CONFERENCE IN HONOR OF SANDRO GRAFFI ON HIS 65TH BIRTHDAY

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## ASPECTS OF KICKED QUANTUM DYNAMICS

Kicked quantum dynamics is a denotation of discrete-time quantum dynamical systems. More than thirty years after the invention of the Kicked Rotor, it is still in the focus of active research. On the one hand, it has given birth to an ever increasing list of variants of the basic original prototypes, which have provided formally simple models for investigation of some general properties of quantum transport: these include dynamical localization, anomalous diffusion, decay from stable phase-space islands, and lately directed transport. On the other hand, renewed interest on the physical side has been stimulated by experimental realizations, which are now possible, thanks to the science and technology of cold and ultra-cold atoms. However, quite a few exact results have been obtained so far. In this talk some mathematical problems, connected with recent models of kicked quantum dynamics, will be reviewed.