

**PHYSICAL COLLOQUIUM  
INVITATION**

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Monday, 09.05.2016, 4.15 p.m., W2-1-148

speaks

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about

**Waves in weakly scattering random media:**

**from branched electron flow to the random focusing of tsunami waves**

*Wave propagation in random media* — this might sound abstract but is in fact very tangible and almost omnipresent in science and everyday life. Examples are surface water waves, but also light, sound, electrons, tsunamis and even earth quakes are waves that in a natural environment typically propagate through a complex medium. Due to its complexity, the medium is often best described as random, with examples including the turbulent atmosphere, complex patterns of ocean currents or a semiconductor crystal sprinkled with impurities. In recent years it has become clear that even very small fluctuations in the random medium, if they are correlated, lead to focussing of the waves in pronounced branch-like spatial structures and to heavy-tailed intensity distributions. This branching has been reported for electron, micro, sound, and water waves.

I will give an overview over the phenomenon of branching and the statistical characteristics of branched flows, discussing examples from ballistic electron transport in semiconductors to the propagation of tsunamis waves.

All interested persons are cordially invited.

Sgd. Prof. Joachim Peinke