



**Di, 27.1.2015, 11:00 Uhr**  
**Hörsaal für Physik**

**“Soft Matter in Hard Confinement: How molecular condensates  
arrange, diffuse and flow in nanoporous media”**

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The advent of tailorable nanoporous solids, such as porous silicon, silica and alumina, allows one to explore the equilibrium and non-equilibrium properties of condensed matter in well-defined, nanostructured geometries. In my talk I will present selected experiments on kinetic and thermodynamic phenomena, ranging from spontaneous imbibition, capillary condensation and glass formation to nematic ordering and crystallization in pores a few nanometers across. Depending on the nature of the basic building block of the molecular assemblies investigated (rare gas molecules, water, liquid crystals, linear hydrocarbons, polymers and proteins) and the mean pore diameter of the porous host a remarkable robustness, however, also substantial deviations from the macroscopic bulk behaviour can be observed.