

O 1: Invited Talk (Thomas Greber)

Time: Monday 9:30–10:15

Location: TRE Phy

Invited Talk

O 1.1 Mon 9:30 TRE Phy

Building blocks for molecular spintronics: From C60 to Spin-Shuttles on Surfaces — •THOMAS GREBER — Physik-Institut, Universität Zürich, CH-8057 Zürich, Schweiz

After the discovery of C₆₀ it was immediately realized that the hollow carbon shell molecules may host atoms or molecules. If such endofullerenes host unpaired electrons, they act as "spin-shuttles", where the spin is protected from the environment by a diamagnetic carbon cage. Only recently, trimetal nitride cluster fullerenes turned out to have members in the family of single molecule magnets. It was e.g. shown that the three molecules Dy_nSc_(3-n) N@C₈₀ (*n*=1,2,3), all dis-

play magnetic hysteresis, though the interaction between the dysprosium ions in the cage produces distinct ground states, where the Dy₂ case is exchange stabilized and has record remanence time in zero field. The magnetic moments do not align parallel to an external magnetic field but remain related to the orientation of the cages and the endohedral clusters. This can be directly seen in the angular dependence of x-ray magnetic circular dichroism of molecules oriented by surfaces. By means of resonant photoelectron diffraction it is possible to access the interplay between conformation, work function and magnetism in detail. The understanding of this interplay might give rise to new opportunities in molecular spintronics.