Physical Sciences Seminar

Magnetism in ultrathin layered materials

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Host: Johannes Fink

Layered magnetic insulators that can be exfoliated to the ultrathin limit are highly desirable, as we can potentially create topological states and study electron correlations by incorporating them in van der Waals heterostructures. Such materials were finally realized in 2017 with the isolation of monolayer CrI3 and bilayer CrGeTe3. However, this field is in its infancy and few-layer films have complex properties different from bulk, such as the ferromagnetic to antiferromagnetic transition in CrI3. In this talk, I will discuss our isolation and characterization of the few-layer chrome trihalides CrI3 and CrCl3. We combine electron tunneling, magneto-optical, and Raman measurements, to arrive at a consistent picture correlating structural and magnetic properties of the films. The focus will be on electronic detection of magnetic states in CrI3 and CrCl3 using spin-filter tunneling of electrons through magnetic insulating barriers.

Monday, January 13, 2020 10:00am - 11:00am
Mondi Seminar Room 2, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.