CONDENSED MATTER SCIENCES SEMINAR

Professor Laszlo Forro

University of Notre Dame

Host

Dr Vladimir Dobrosavljevic

Title

Surprises in Transition Metal Dichalcogenides Revealed by Interlayer Charge Tansport

Friday, Oct 11th, 2024

1st Floor – B101

15:00-16:00

Abstract

A promising strategy for functionalizing layered Van der Waals materials involves manipulating the coupling between atomic sheets to create novel, tunable electronic states with exploitable properties. Interlayer charge transport, which closely reflects these interactions, has been largely unexplored due to experimental difficulties. Using focused ion beam (FIB) microfabrication, we conducted a detailed study of resistivity anisotropy in monocrystalline, bulk transition metal dichalcogenides (TMDs) such as 1T-TaS2 and 2H-NbS2. These measurements have revealed several unexpected findings, challenging our traditional understanding of these materials, which will be discussed in the presentation.

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Bio

László Forró obtained his B.S. in physics from Eötvös Loránd University, Budapest, and his M.S. from Université Paris XI. He completed his Ph.D. at the University of Zagreb in 1985. At the École Polytechnique Fédérale de Lausanne (EPFL), he held the Chair of Nanostructures and Novel Electronic Materials. In 2003, he founded the Institute of Physics of Complex Matter at EPFL and served as its director until 2008. In 2021, he was appointed Director of the Stavropoulos Center for Complex Quantum Matter at the University of Notre Dame.

Honors and Awards: Member of the Hungarian Academy of Sciences; Member of the Croatian Academy of Sciences; Member of the Serbian Academy of Sciences; Doctor Honoris Causa, University of Szeged and Technical University of Budapest, Hungary; Doppler Professorship, University of Miskolc; Spiridon Brusina Award, Croatian Society of Natural Sciences; Award, Serbian Material Science Society; APS Fellow, 2023