



## Quantum Colloquium

# Quantum Colloquium | Talk by Alberto Morpurgo

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Host: Hryhoriy Polshyn

Probing 2D magnetic materials with magnetotransport The ability to exfoliate vdW crystals of magnetic compounds is giving access to a vast, unexplored family of two-dimensional magnetic materials, with a variety of different magnetic ground states. Most of these compounds are semiconductors that offer –besides the possibility to explore magnetism in highly controlled 2D crystals— a new playground to combine magnetic and semiconducting functionalities. In this talk I will discuss how magnetotransport experiments allow the investigation of the magnetic phase diagram of 2D magnetic material down to the ultimate limit of individual monolayers. Our work includes measurements on devices that employ multilayers of 2D magnetic semiconductors as tunnel barriers between conducting electrodes of different types (e.g., graphene or metallic ferromagnetic Fe<sub>3</sub>GeTe<sub>2</sub>) as well as measurements on field-effect transistors in which the 2D magnetic material form the device channel. I will provide multiple examples of materials in which these transport experiments reveal phenomena that are difficult –or cannot—be accessed with other existing experimental techniques.

**Tuesday, May 28, 2024 11:00am - 12:00pm**

Heinzel Seminar Room / Ground Floor / Office Building West



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