

Chiraltronics: Exploring the interplay between spin and chirality



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APERO
after the
colloquium

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Chirality is omnipresent in nature through a fundamental coupling between chirality and angular momentum. Despite extensive experimental evidence, the underlying mechanisms of this coupling remain debated. Here, we will explore how chiral magnetic textures can be stabilized in altermagnets, a new class of magnetism. Turning to structurally chiral magnetic molecules, we will show that chirality is directly linked to their intrinsic magnetic moments. Bringing both together, we will discuss how molecular design can control spin phenomena at hybrid chiral molecule-magnet interfaces. Our findings pave a pathway towards functional "chiraltronic" devices – turning a fundamental puzzle into a technological opportunity.

Host : Prof. Vladimir Manucharyan