

Bridging electrons and magnetic textures for AI and post- CMOS technologies

DIPC SEMINARS

SPEAKER

Mu-Kun Lee
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WHEN

2026/07/29
12:00

PLACE

DIPC Josebe Olarra Seminar
Room

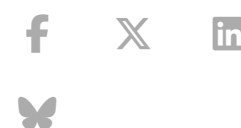
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Rubén M. Otxoa

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Electrons are quantum particles carrying charge and spin as intrinsic properties, while magnetizations in magnetic materials are approximately classical vectors that can form topological textures as information carriers. We aim at theoretically bridging electrons and magnetizations to explore novel physical phenomena in topological magnets hosting skyrmions and domain walls, with a goal to develop new devices for artificial intelligence (AI), spintronics information processing, and pure-crystal current diodes in the post-CMOS era. In this talk, I will present our recent works regarding three specific topics: (1) Current-driven dynamics of skyrmions and domain walls in synthetic antiferromagnets, a unified framework of their motion and deformation. (2) Nonreciprocal electrical transport in a room-temperature chiral magnet, and (3) Reservoir computing in the AI field by using spin waves in a skyrmion crystal.

References:

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