

SEMINARIO

Sala A del CNR-IMEM | 12 dicembre 2024 | ore 10:30

Unraveling Quasi-Static Remanence: Insights into Spin Canting and Dzyaloshinskii-Moriya

Interaction in Canted Antiferromagnets

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This seminar delves into the intriguing phenomenon of quasi-static remanent magnetization (μ) in canted antiferromagnets, driven by the Dzyaloshinskii-Moriya Interaction (DMI). By exploring a diverse array of DMI-driven materials such as α -Fe₂O₃, FeBO₃, and carbonate systems like CoCO₃, NiCO₃, and MnCO₃, we uncover ultraslow magnetization relaxation, a unique quasi-static remanence, and its counterintuitive dependence on magnetic fields. Experimental data reveal that the extent and nature of spin canting, influenced by morphology and strain effects, directly affect the magnitude of quasi-static remanence. Key results from SQUID magnetometry and neutron diffraction emphasize the role of remanence measurements as a tool to probe spin canting, opening new avenues for exploring spin-canted systems and advancing our understanding of DMI-driven phenomena.

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