

Seminario

Domain wall motion in magnetic thin films: Creep, avalanches and roughness

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RESUMEN: Development of new devices based on the use of magnetic domains will strongly depend on our capability to describe domain wall motion and the different ways to control it. In magnetic thin films, domain wall motion is controlled by the interplay between domain wall elasticity, external forces, temperature fluctuations and the intrinsic disorder energy landscape. Here we review the main concepts describing domain wall motion subject to an external magnetic field, including depinning transition, creep motion, and domain wall roughness. Then we focus on the statistical description of the avalanches behind the forward motion at very small velocities. Furthermore we also highlight the importance to properly account for fluctuations of the domain wall position and present measurements of the roughness exponent.



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