Abstract Submitted
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Vortex dynamics and vortex lattice reconfiguration in superconducting-magnetic hybrids.[1] JOSE L. VICENT, DAVID PEREZ DE LARA, Universidad Complutense, ALEJANDRO ALIJA, Universidad Oviedo, ELVIRA M. GONZALEZ, Universidad Complutense, JOSE I. MARTIN, MARIA VELEZ, Universidad Oviedo, JOSE V. ANGUITA, Instituto Microelectronica (CSIC) — Amorphous superconducting films (Mo_3Si) have been grown on top of array of nanometric magnets. These periodic magnetic centers have been fabricated on Si substrates by Electron Beam Lithography and sputtering techniques. In the mixed state the competition between the intrinsic and random pinning potential of the superconducting film and the artificial induced periodic pinning potential governs the vortex lattice behavior. Close to critical temperature, the periodic potentials could overcome the random potentials, then the vortex lattice dynamics shows effects which are related with the array dimension and symmetry. We will show in these hybrid systems enhancements of matching effects between the vortex lattice and the array unit cell, and different vortex lattice configurations.

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