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The Peak Effect anomaly in low and high T_C superconductors: stable and metaestables vortex lattice configurations VICTORIA BEKERIS, GABRIELA PASQUINI, DIEGO PEREZ DAROCA, CLAUDIO CHILIOTTE, GUSTAVO LOZANO, Departamento de Fisica, FCEyN, Universidad de Buenos Aires, Pabellon I Ciudad Universitaria, Buenos Aires, Argentina — Competing interactions in the vortex lattice (VL) of type II superconductors give rise to an order-disorder transition known as Peak Effect (PE) anomaly. The strong metastability related to the PE masks the stationary VL configurations (VLCs), both in low and in high T_C superconductors. By means of linear *ac* susceptibility experiments, that avoid VL reorganization, we explore quasi-static stable and metastable states, applying different shaking protocols before measurements. In low T_C $NbSe_2$ [1] crystals we identify T,H regions where stationary configurations are maximally ordered (Bragg Glass), fully disordered or where ordered and disordered stable phases coexist. In contrast, in high T_C $YBa_2Cu_3O_{7-y}$ crystals, metaestability seems to dominate and different metaestable VLCs are accessed depending on the previous dynamic history, with no access to the lowest energy configuration. [1] G. Pasquini *et al.* Phys. Rev. Lett. **100** 247003 (2008)

Victoria Bekeris
Departamento de Fisica, FCEyN, Universidad de Buenos Aires,
Pabellon I Ciudad Universitaria, Buenos Aires, Argentina

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