

Giant Oscillations of the Magnetic Induction at the Surface of Textured YBaCuO+10% BaSnO₃ Plate as a Result of Flux Jumping

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The low-damping oscillations of the surface induction B_{surf} vs time t with giant amplitude (it is better than the value of flux jump ΔB_{FJ} , see figure) in textured YBaCuO superconductors are observed. The structures of the flux jumps were investigated using a miniature Hall probe sensor [1]. It was placed in the centre of the sample surface. One can examine the Hall sensor voltage directly in the transient recorder [2]. The size of the sample is $16,6 \times 2,2 \times 5,7 \text{ mm}^3$. Magnetic field was directed along the small size side of the sample. The excitation of these oscillations in YBaCuO+10% BaSnO₃ plate in the mixed state is a result of giant avalanches of the magnetic flux occurring due to the development of the thermomagnetic instability. Such oscillations contain some information about the vortex matter in the liquid phase.

[1] O.A. Mironov, S.V. Chistyakov, I.Yu. Skrylev, et.al. Industrial Laboratory **56** 1010 (1991).

[2] V.V. Chabanenko, V.F. Rusakov, V.A. Yampolskii, S. Piechota, A. Nabialek, S. Vasiliev, H. Szymczak, arXiv:cond-mat/0106379 v2 11 Mar 2002.