Abstract Submitted for the MAR09 Meeting of The American Physical Society

Intermittent propagation of magnetic flux in superconductors. VITALIY YURCHENKO, ATLE JORSTAD QVILLER, IOURI GALPERINE, University of Oslo, JØRN BINDSLEV HANSEN, PETER MOZHAEV, Technical University of Denmark, TOM HENNING JOHANSEN, University of Oslo, UNIVER-SITY OF OSLO TEAM, TECHNICAL UNIVERSITY OF DENMARK TEAM -Regular arrays of planar defects can be introduced in superconducting YBa2Cu3O7 thin films by depositing them on tilted substrates. This results in anisotropy of critical currents flowing in the plane of the film. At optimal tilt angles a substantial increase of the critical currents flowing in both directions, i.e. along and across the planar defects, has been observed. However, the artificially introduced defects also have a dramatic effect on dynamics of the flux propagation: it becomes intermittent. Previously we observed intermittent flux penetration in MgB2 thin films with thermo-magnetic instability, where such flux jumps trigger giant magnetic avalanches. In this report we present results of a real time magneto-optical visualization of the intermittent flux motion in YBCO and discuss possible consequences for its thermo-magnetic stability.

> Vitaliy Yurchenko University of Oslo

Date submitted: 07 Dec 2008

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