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Vortex avalanche in gold-coated and finite-sized MgB_2 thin films. EUN-MI CHOI, HYUN-SOOK LEE, SUNG-IK LEE, POSTECH, Å. A. F. OLSEN, D.V. SHANTSEV, T.H. JOHANSEN, University of Oslo — The vortex avalanches in carbon-free MgB_2 thin films were studied using magneto-optical imaging. The main focus of this study was the effect of a gold coating and the sample size on the occurrence of the dendritic flux avalanches. For this purpose, we prepared two different sets of MgB_2 films. In the first, the films had gold coatings of various thicknesses, and in the second set bare MgB_2 films were patterned into long strips of different widths. The dendritic flux avalanches essentially disappeared for gold coatings thicker than 2.5 μm. Also for strip widths less than 0.33 mm^2 the formation of flux dendrites are suppressed. The results are consistent with a thermomagnetic origin of the dendritic instability.

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