

## Anomalous Magnetic Hysteresis in the Microwave Surface Resistance of MgB<sub>2</sub> Superconductor

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**Abstract** - We report on field-induced variations of the microwave surface resistance in samples of MgB<sub>2</sub> produced by different methods. By sweeping the DC magnetic field up and down, we have detected magnetic hysteresis that can be ascribed to the different fluxon density at increasing and decreasing DC fields in the critical state of the fluxon lattice. The hysteresis observed in the bulk samples has an unusual shape, which cannot be explained in the framework of the critical-state models.

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