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Magneto-resistance and magnetoimpedance measurements on iron whiskers — •MATTHÄUS LANGOSCH, HAIBIN GAO, and UWE HARTMANN — Institute of Experimental Physics, Saarland University, 66123 Saarbrücken, Germany

Magnetoimpedance (MI) measurements on iron single crystals (iron whiskers) with growing directions $\langle 100 \rangle$ and $\langle 111 \rangle$ were carried out at room temperature as a function of applied longitudinal magnetic field, current amplitude and frequency. Simultaneous Kerr microscopy was employed to study the magnetic surface domain structure of the samples. Measurements also provide ordinary magneto-resistance (MR) contributions. The contributions of the MI and MR effects were discussed based on the experimental results. The correlation between domain structure and magnetoimpedance effect was studied on the basis of Kerr microscopy images and resistivity data.

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