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Intrinsic Resistance of Magnetic Topological Defects ANH KIET NGUYEN, ROMAN SHCHELUSKIN, ARNE BRATAAS, Norwegian University of Science and Technology — We show that magnetic topological defects in zincblende magnetic semiconductors have an intrinsic resistance against ballistic transport of holes with spin-orbit coupling. The intrinsic resistance is independent of the real space size and detailed shape of the defects, provided that their spatial variations are sufficiently smooth. Rather, it depends on the shape of the defects in the magnetic orderparameter space. For typical parameters, the intrinsic resistance of a domain wall defect is as large as the geometrical resistance and should therefore be experimentally measurable.

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