

Abstract Submitted
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Microwave Measurements of Giant Magnetoresistance¹ DANIEL ENDEAN, University of Minnesota, JAMES HEYMAN, Macalaster College, STEFAN MAAT, Hitachi Global Storage Technologies, E. DAN DAHLBERG, University of Minnesota — A measurement of the GMR effect seen in the reflection and transmission coefficients of a film placed in a rectangular microwave waveguide bridge is presented. The relative change in transmission coefficient is found to be nearly a factor of 2 larger than the transport GMR effect while the change in reflection coefficient is of opposite sign and an order of magnitude smaller. A full treatment of the reflection and transmission coefficients, considering both the interfaces and the decay of the fields within the layers, provides a quantitative relationship to the transport GMR with no free parameters. We describe this model and show agreement with experiment.

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