

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Determination of ferromagnetic resonance of thin films with coplanar waveguide XIN FAN¹, TAKAHIRO MORIYAMA, RONG CAO, JOHN XIAO — Determination of ferromagnetic resonance of thin films with coplanar waveguide X. Fan, T. Moriyama, R. Cao, John Q. Xiao Department of Physics and Astronomy, University of Delaware, Newark Delaware 19716 USA Recently, Coplanar Waveguide (CPW) has been applied to determine Ferromagnetic Resonance (FMR) of magnetic thin film¹ due to its simple geometry and broadband nature. Compared to the conventional method using reflection in a resonant cavity, CPW should be interpreted by the transmission line theory, taking into account of both transmission and reflection. It has been shown that FMR linewidth extracted from S-matrix after four port calibration ² differs from that extracted from transmission only, which neglects the impedance mismatch effect. However, the four port calibration is rather complex and tedious. In this presentation, we introduce a new method to extract FMR spectrum without performing four port calibration. We use both transmission and reflection signals, and consider the impedance mismatch, We will demonstrate the difference between these two methods are negligibly small.
1. Y. Ding, T. J. Klemmer, T. M. Crawford, J. Appl. Phys. 96, 2969, 2004 2. C. Bilzer, T. Devolder, P. Crozat, J. Appl. Phys. 101, 074505, 2007

¹Member ID will be officially activated on 12/01

Xin Fan

Date submitted: 27 Nov 2007

Electronic form version 1.4