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Frequency-dependent magnetization response of CoFe thin film
MINGQIANG BAO, ALEXANDER KHITUN, JOOYOUNG LEE, KANG L. WANG, EE Dept., UCLA, AJEY P. JACOB, TMG External Programs, Intel Corporation — Frequency-dependent magnetization dynamics in CoFe thin films is investigated. Magnetization has been generated and detected by a pair of micrometer-wide antennas. The experimental data have been mapped showing the frequency-dependence of both the amplitude and the phase under external magnetic field. The response on a continuous single frequency excitation shows complex behaviors including those of harmonic resonances and half-frequency resonances. Furthermore, the device time-domain response of any input voltage/current pulse under any external magnetic field (below 350 Oe) can be reconstructed from our measured frequency-domain maps through the Fourier transform, and is validated with our time-domain measurement data.

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