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**Interface Magnetization Switching and Demagnetization in *Fe/Al* films and *Fe/Pt* nanoparticles** WEI LAI, TETIANA NOSACH, YU GONG, YUHANG REN, CHAEHYUN KIM, SAVAS DELIKANLI, HAO ZENG, THE ULTRAFAST OPTICS GROUP AT HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK TEAM, SPIN EFFECTS AND NANOMAGNETISM GROUP AT THE UNIVERSITY AT BUFFALO TEAM — We report on the reversal and demagnetization processes of the Fe interface layer magnetization in thin films and nanoparticles of *Fe/Al* and *Fe/Pt* by time-resolved magnetization-induced second-harmonic generation. The results are compared with those of the bulk magnetization as obtained from magneto-optic Kerr effect. We realize that switching and demagnetization characteristics are distinctly different between bulk and interface layers because of the interface-derived anisotropy and the dipole interactions. In particular, the surface and interface magnetism will dominate the behaviors of nanoscale structures.

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