Ultrafast magnetization and spin oscillation in thin Ni/Fe film
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Research Institute of Standards and Science — We investigated the electron and spin
dynamics in thin Ni/Fe film by means of time-resolved magneto-optical Kerr effect
(MOKE). The magnetization of the film changes rapidly during the subpicosecond,
including the spin relaxation and electron-phonon coupling. We observed the spin
oscillations in the MOKE signal varying the polarization angle between the pump
and probe beams. The period of the spin oscillations was about 200 fs. It is supposed
that this is not only related to the polarization in film induced ultrafast optical field
but mediated also the spin-orbit coupling.