

Ultrafast spintronics with terahertz waves

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In magnetic materials, many resonances and relaxation processes coincide with the terahertz (THz) range. Examples are the frequencies of magnons and phonons, and the spin-dependent rates of electron scattering. Consequently, THz electromagnetic radiation is a powerful tool for probing and even controlling spin precession and spin transport in magnetic solids. Conversely, magnetic phenomena are attracting increasing interest for THz photonic applications. This talk will provide an introduction to THz spectroscopy of ultrafast spin dynamics in magnetic materials.