

# Superkick Effect in Absorption of Twisted Photons

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We consider physical processes caused by the twisted photons for a wide range of energy scales, from optical (eV) to nuclear (MeV). We demonstrate that in order to satisfy angular momentum conservation, absorption of a twisted photon leads to a transverse recoil of the final particle or a system of particles leading to increased threshold energy required for the reaction to proceed. Observable effects are predicted for cold trapped ions and photonuclear processes.