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Collisional disorientation cross section in the J=1/2 cesium atoms[1] DAVE S. FISHER, SARAH LAUBER, ROBERT MISCONIN, SEAN BAUMGARTNER, BURCIN S. BAYRAM, Miami University, Physics Department — Measurements of collisional depolarization cross sections play important role to gain valuable information about the interaction between neutral and rare-gas atoms. A key element to understand collision dynamics is the detail analysis of the polarization of the emitted photons. We have experimentally investigated collisional cross section of the excited J=1/2 cesium atoms, by collisions with the ground level argon atoms from a circular polarization spectra. Orientation in the J=1/2 level was optically induced by a circularly polarized light with a positive helicity. A two-photon double-resonance $6s\,^2S_{1/2}\rightarrow 6p\,^2P_{1/2}\rightarrow 10s\,^2S_{1/2}$ condition was achieved using nanosecond pulse dye lasers, and an intensity of the cascade fluorescence was monitored in the presence of argon atoms ranging from 5 mbar to 133 mbar. We present collisional disorientation cross section which was extracted from the circular polarization spectra.

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