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Observation of Mollow triplet transfer in 3He atoms[1] YUANZHI ZHAN, XIANG PENG, SHENG LI, HE WANG, LIANG ZHANG, JINGBIAO CHEN, HONG GUO, Peking University — We experimentally observed the Mollow triplet (MT) induced with an oscillating magnetic field and studied the dressed states of 3He atoms. The MT signatures from the ground states of 3He atoms are transferred to the metastable states by metastability-exchange collisions (MECs) and then measured with optical detection. The transfer process is simulated with angular momentum equations, and the simulation results are corresponding to the experimental data. The frequency interval of the sidebands is linear with the amplitude of the resonant oscillating magnetic field, which shows the possibility applying the measurement of the amplitude of the oscillating magnetic fields. The center peak of MT can be controlled by the optical pumping laser, which leads to realize the new scheme of optical modulation.

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