

Spin-Orbital Angular Momentum Coupling in Cold Atoms

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I shall describe briefly my collaboration with the experimental group of Dr. Yu-Ju Lin (Institute of Atomic and Molecular Sciences, Academia Sinica) on spin-orbital angular momentum coupling in Rb87 bosons. We show how this coupling can be used to create non-trivial vortices, spin textures, and an artificial gauge field. Utilizing the last, a Hess-Fairbank type of experiment has also been performed.

If time permits, I would also briefly mention my theoretical investigation of spontaneous thermal Hall conductivity of chiral superconductors with gap nodes.