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Imaging and manipulating effective ferromagnetism in a shaken optical[1] COLIN PARKER, LI-CHUNG HA, KARINA JIMÉNEZ-GARCíA, CHENG CHIN, Univ of Chicago — Recentely, we have developed a powerful lattice shaking technique to introduce long-range itinerant ferromagnetic order in cold atomic gases, using only one atomic internal state[1]. By using near-resonant lattice shaking we can engineer a band with two minima, which we label as spin-up and spin-down. Here we extend this technique to shaking in two directions. The resulting band has four minima and thus permits four types of domains, allowing for new possibilities such as "Y" or "X" type boundaries. I will discuss the prospects for mapping this domain structure, as well as for using a superlattice to manipulate domains.

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