Abstract Submitted
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Selected applications of ultracold strontium: quasicrystals, anyons, and compact atom sources[1] MAX PRICHARD, TOSHIHIKO SHIMASAKI, PETER DOTTI, ENRIQUE MORELL, JARED PAGETT, DAVID WELD, University of California, Santa Barbara — Ultracold strontium in a bichromatic lattice can serve as a quantum simulator which probes the effects of quasiperiodicity on many-body quantum systems. We present recent work demonstrating phasonic spectroscopy of Strontium in an optical lattice [1], and describe experiments exploring dynamical localization in driven optical crystals and quasicrystals. Separately, we report progress on efforts to realize non-Abelian anyons in a biased zig-zag lattice, and describe a compact cold atom source in which a magneto-optical trap of strontium is loaded by laser illumination of strontium oxide. [1] Rajagopal, Shankari V., et al. PRL 123.22 (2019): 223201.

[1]ARO (MURI W911NF171032) and NSF (CAREER 1555313)

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