

Abstract Submitted
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Forbidden transitions of ultracold Sr₂ molecules BART MCGUYER, MICKEY MCDONALD, GEOFFREY IWATA, TANYA ZELEVINSKY, Columbia University — We present precision studies of forbidden molecular transitions with ultracold Sr₂ in an optical lattice. The molecules are photoassociated from ⁸⁸Sr atoms near the ¹S₀-³P₁ intercombination line. We strongly enable forbidden $\Delta J > 1$ transitions using small magnetic fields, and report doubly forbidden optical magnetic-dipole and electric-quadrupole transitions to subradiant excited states. In magic-wavelength optical lattices, these subradiant states provide very high-Q molecular spectra.

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