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Symplectic Effective Field Theory[1] DAVID KEKEJIAN, JERRY DRAAYER, KRISTINA LAUNEY, Louisiana State University — We explore the emergence of symplectic Sp(3,R) symmetry, a dynamical symmetry that is commonly displayed in atomic nuclei, from an effective quantum field theory. Starting from a simple extension to the harmonic oscillator Lagrangian, we construct an effective field theory that yields a quantum mechanical Hamiltonian that is Sp(3,R)-symmetric in nature. The application of this Hamiltonian to various light nuclei produces reasonable energy spectra, B(E2) strengths and radii.

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