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Pionless EFT calculations of nuclear response functions[1] ANDREW ANDIS, SEBASTIAN KOENIG, North Carolina State University — Nuclear response functions encode the interaction of atomic nuclei with electromagnetic (or electroweak) probes. These observables can be used to understand the details of nuclear dynamics and in particular to relate theoretical predictions to experiments. Pionless effective field theory (EFT), and in particular the expansion of light nuclei around the unitarity limit, have been shown to successfully describe the binding energies and radii of light nuclei. To further assess the predictive power of this framework, we study in this work the longitudinal response function of few-nucleon states in Pionless EFT. We implement the Lorentz Integral Transform (LIT), an established method that makes it possible to calculate continuum observables like response functions with effective bound-state methods, trading the complexity of an explicit break-up calculation for a delicate numerical inversion. We present our implementation of the LIT in momentum space, using interactions provided by Pionless EFT, as well as first results derived within this framework.

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