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Time-dependent approach to the electric dipole response of few-nucleon systems RIE SEKINE, WATARU HORIUCHI, Department of Physics, Hokkaido University, Sapporo 060-0810, Japan — The electric dipole (E1) response of nucleus is often used to study nuclear resonant structure as well as the ground state properties. While there are several methods to obtain the E1 strength distribution, here we take a time-dependent approach with a basis expansion. In the basis expansion method, its matrix element can be calculated analytically, and thus it allows us to calculate the time evolution of the wave function fast and accurately. We employ the correlated Gaussian (CG) as a basis function. The CG method is an efficient way to describe many-body correlations and is easily extended to many-body systems. In addition, we extend the CG into complex-range to make the basis function more flexible. In this talk, we show the E1 strength distribution of three- and four-nucleon systems, and compare our results with experiments and other methods.

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