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Nuclear electric dipole moment of light nuclei in the gaussian expansion method

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The nuclear electric dipole moment is a very sensitive probe of CP violation beyond the standard model, and for light nuclei, it can be evaluated accurately using the few-body calculational methods. In this work, we evaluate the electric dipole moment of the deuteron, ${}^3\text{He}$, ${}^3\text{H}$, ${}^6\text{Li}$, and ${}^9\text{Be}$ in the Gaussian expansion method with realistic nuclear force, and assuming the one-meson exchange model for the P, CP-odd nuclear force. We then give the future prospects for BSM models such as the supersymmetry within the prospective experimental sensitivity.

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