

**Title:** Role of relativistic many-body theory for electron electric dipole moment searches in radioactive molecules.

**Abstract:** The electric dipole moment of the electron (eEDM) is an intrinsic property of the particle that arises due to simultaneous violation of both parity and time reversal symmetries. The property has not yet been detected in experiment. Upper bounds to the eEDM are obtained from table-top experiments using molecular systems. Such bounds serve as extremely useful non-accelerator probes of physics beyond the Standard Model of elementary particles and also offer insights into the baryon asymmetry in the universe. Proposing a new molecular candidate for a future eEDM experiment requires theoretical calculations and analysis using a relativistic many-body theory, besides considering experimental feasibility. In this talk, we shall present results from our recent and ongoing works on obtaining the relevant quantities for considering several radioactive molecules for eEDM search experiments. We employ the relativistic coupled cluster method, which is considered to be the gold standard of electronic structure calculations, for our calculations on RaH, RaX (X=F, Cl, Br, and At), RaZ (Z=Cu, Ag, and Au), LrO, LrH<sup>+</sup>, and LrF<sup>+</sup> molecules.