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## Measuring the electron's electric dipole moment using polyatomic YbOH molecules

New fundamental particles at high energy scales that have not been reached by the Large Hadron Collider (LHC) could explain the observed matter-antimatter asymmetry that cannot be understood by the Standard Model of particle physics. These hypothetical particles, if they exist, will introduce a tiny electric dipole moment on the electron (eEDM), which can be probed by extremely sensitive measurement of the electron spin precession in a huge intra-molecular electric field. We plan to measure the eEDM using trapped polyatomic YbOH molecules. Polyatomic molecules may combine the advantages of laser cooling (long coherence), high sensitivity to CP violating physics, and robustness to systematic error. I will present our recent progress on the understanding of the structure of the YbOH molecule and how it can be used to improve the precision of eEDM measurement.

## **Scientific topic**

Symmetries and Interactions

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