

# **Chikako Idegawa "Electron electric dipole moment and electroweak baryogenesis in a complex scalar extension of the Standard Model"**

*Wednesday, 8 November 2023 17:00 (25 minutes)*

In the Standard Model plus one complex scalar field, it is known that the signal of the new physics is suppressed when Higgs boson masses are degenerate. The introduction of higher dimensional operators is necessary to generate the CP symmetry violation associated with the realization of electroweak baryogenesis in this model. In this study, We analyze the contribution to the electron electric dipole moment (eEDM) produced through higher dimensional operators and show that the degenerate Higgs plays an important role in satisfying severe constraints from experiments. In addition, the possibility of baryon number generation in parameter regions consistent with eEDM experiments is evaluated.

**Session Classification:** Short talks