## **CEvNS bounds on neutrino electromagnetic** properties

Thursday 23 March 2023 09:20 (15 minutes)

In this talk, I discuss the possibility to set limits on neutrino electromagnetic properties using the data of the COHERENT experiment and the Dresden-II reactor. I discuss neutrino magnetic moments, charge radii and millicharges. In order to obtain the bounds, the contribution of elastic neutrino-electron scattering, which can become strongly effected for some of the parameters that are considered, must be included, too. I show the dependence of the limits on different hypotheses for the germanium quenching factor and the reactor antineutrino flux. Interestingly, we were able to set a new best upper limit on the electron neutrino charge radius and significantly improve the other CEvNS-related limits on the neutrino electric charge and magnetic moment.

**Authors:** Dr GIUNTI, Carlo (INFN); TERNES, Christoph Andreas (INFN, Sezione di Torino); DORDEI, Francesca (INFN, Cagliari (IT)); CADEDDU, Matteo; ATZORI CORONA, Mattia (University of Cagliari; INFN of Cagliari); CAR-GIOLI, Nicola; ZHANG, Yiyu (Institute of High Energy Physics); LI, Yufeng (Institute of High Energy Physics, Chinese Academy of Sciences)

Presenter: DORDEI, Francesca (INFN, Cagliari (IT))

Session Classification: Phenomenology/ Theory