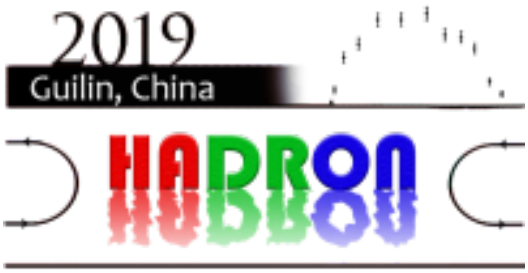

Contribution ID: **201** Type: **Plenary**

Constraining BSM physics by precision hadron calculations

Wednesday, 21 August 2019 16:40 (35 minutes)

Low-energy tests of fundamental symmetries are extremely sensitive probes of physics beyond the Standard Model (SM), reaching scales that are comparable, if not higher, than directly accessible at the energy frontier. The interpretation of low-energy precision experiments and their connection with models of BSM physics relies on controlling the theoretical uncertainties induced by the nonperturbative nature of QCD at low energy and of the nuclear interactions. In this talk I will discuss how Effective Field Theories techniques can lead to improved predictions for low-energy experiments, with controlled theoretical uncertainties. I will first introduce an EFT framework for the description of neutrinoless double beta decay. I will show how the EFT allows to derive a very general parameterization of the double beta rate, which captures but goes beyond the standard scenario of light Majorana neutrino exchange, and to construct the double beta transition operators in a consistent power counting. I will then review recent progress in the calculation of electric dipole moments of the nucleon and of light nuclei, and address the remaining challenges for a smooth connection between experiments and theories of physics beyond the Standard Model.

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