
Contribution ID: **26** Type: **not specified**

# Effective field theory at nuclear scales from the functional renormalization group

*Tuesday 24 September 2024 16:40 (30 minutes)*

The atomic nucleus is a complex system : it is made of composite degrees of freedom strongly coupled by their (strong and electroweak) interactions and hosts a bunch of emergent behaviors, e.g. deformations as well as superfluid and molecular instabilities. Nuclear structure physics endeavors a robust and accurate description of the way an arbitrary number of nucleons self-organizes and gets disorganized in nuclei. To achieve this goal, nuclear physics has entered an era of reformulation of its standard phenomenological models into bona fide effective field theories (EFTs). However, the empirical microscopic model offering the best compromise between predictive power and numerical complexity - the so-called energy density functional (EDF) - has so far resisted all attempts of reformulation into an EFT. In this talk, we show that the functional renormalization group is the appropriate tool for tuning the EDF into an EFT.

**Presenter:** EBRAN, Jean Paul

**Session Classification:** Parallel A