Hadronic Contributions to New Physics Searches



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Chiral effective field theory for dark matter direct detection

Monday 26 September 2016 10:10 (35 minutes)

Summary

In order to extract constraints on New Physics from direct-detection experiments, both the single-nucleon matrix elements as well as the nuclear structure aspects need to be under control.

The response of a nucleus interacting with a WIMP, with relevant momentum transfers of the order of the pion mass,

can be conveniently addressed within chiral EFT, in particular including the effects of two-body currents. In the talk I will review chiral-EFT calculations for the relevant nuclear structure factors, and discuss the corresponding analysis strategies for direct-detection experiments.

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Session Classification: Direct searches of Dark Matter