



Contribution ID: 33

Type: **Talk**

Nuclear electric dipole moment of light nuclei in the gaussian expansion method

Thursday, 2 July 2015 16:50 (15 minutes)

The nuclear electric dipole moment is a very sensitive probe of CP violation beyond the standard model, and for light nuclei, it can be evaluated accurately using the few-body calculational methods. In this work, we evaluate the electric dipole moment of the deuteron, ^3He , ^3H , ^6Li , and ^9Be in the Gaussian expansion method with realistic nuclear force, and assuming the one-meson exchange model for the P, CP-odd nuclear force. We then give the future prospects for BSM models such as the supersymmetry within the prospective experimental sensitivity.

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Session Classification: Parallel Session 6 - Few-Body Physics WG

Track Classification: Few-Body Physics Working Group