

SÉMINAIRE du PÔLE THÉORIE



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Uncovering the mechanism of chiral three-nucleon force in driving spinorbit splitting

We clarify the relationship between spinorbit (SO) splitting and three-nucleon forces (3NFs) derived from chiral effective field theory. While the influence of 3NFs on enhancing SO splitting is well known, the mechanisms underlying this enhancement have remained elusive. Through the irreducible tensor decomposition of the chiral 3NF, our investigation reveals that the rank-1 tensor component of the 3NF contributes primarily to the SO splitting in light nuclei. We also discuss the antisymmetric nature of the rank-1 3NF, which is akin to the Dzyaloshinsky-Moriya interaction causing the spin canting in magnetic ions.

Tuesday 25th November 2025 –
14h00

IJCLab, Build. 100, Room A201