

Nuclear Anapole Moments and Their Constraints on the Nuclear Parity-nonconserving Interaction

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The anapole moment is a parity-odd and time-reversal-even electromagnetic moment. Although it was conjectured shortly after the discovery of parity nonconservation, its existence has not been clearly shown until recently in heavy nuclear systems, which are known to be the suitable laboratories because of their many-body enhancement. By carefully identifying the nuclear-spin-dependent atomic parity nonconserving effects, the first clear evidence was found in cesium. In this talk, I will discuss how nuclear anapole moments are used to constrain the nuclear parity-nonconserving force, a still less well-known channel among weak interactions.