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Chiral Wobbling in ^{135}Pr[1] NIRUPAMA SENSHARMA, UMESH GARG, STEFAN FRAUENDORF, JOSEPH L COZZI, KEVIN B HOWARD, Univ of Notre Dame, SHAOFEI ZHU, MICHAEL P CARPENTER, FILIP G KONDEV, DARIUSZ SEWERYNIAK, Argonne Natl Lab, ROBERT V F JANSSENS, Univ of NC - Chapel Hill, AKAA D AYANGEAKAA, DARYL HARTLEY, US Naval Academy, SANDEEP S GHUGRE, UGC-DAE Consortium for Scientific Research, India, RUDRAJYOTI PALIT, Tata Institute of Fundamental Research, India — Chirality and wobbling are the two unique signatures that help in the identification of the rare triaxial shape in nuclei. While both these modes have been separately established in a few limited regions of the nuclear chart, the coexistence of chirality and wobbling in a nucleus, a Chiral Wobbler, has never been observed so far. Using a high statistics Gammasphere experiment with the ^{123}Sb(^{16}O,4n)^{135}Pr reaction, the very first observation of a Chiral Wobbler in ^{135}Pr has been made. In addition to the previously established $n_\omega = 1$ and $n_\omega = 2$ wobbling bands, two chiral-partner bands with the configuration $\pi h_{11/2} \times \nu h_{11/2}^{-2}$ have been observed in this nucleus. Angular distribution analyses of the $\Delta I = 1$ connecting transitions between the two chiral partners have revealed their characteristic M1/E2 nature. Tilted axis cranking (TAC) calculations are found to be in good agreement with the experiment.

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