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Effects of Random Interactions in a Finite Fermi System¹ JENNIFER GLICK, VLADIMIR ZELEVINSKY, Michigan State University and NSCL
— The unexpected observation in [C. Johnson, G. Bertsch, D. Dean, Phys. Rev. Lett. 80 (1998) 2749] that a randomly chosen rotationally invariant interaction in many-body fermi systems leads to the statistical predominance of a ground state of zero spin, suggested that pairing correlations alone are not sufficient to explain the zero spin ground state of even-even nuclei. Despite numerous efforts and proposed explanations, this problem still lacks a satisfactory solution. We suggested in [V. Zelevinsky, A. Volya, Physics Reports 391 (2004) 311-352] that a statistical approach, using a simple single-j fermion model, shows how conservation laws and the geometry of the single-particle space can be used to determine the distribution of ground state spins.

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