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¹⁹⁴Tl as the first example revealing chiral symmetry breaking in the pair of four-quasiparticle bands

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Abstract content
   (Max 300 words)

A study of ¹⁹⁴Tl has revealed the presence of two strongly coupled negative-parity rotational bands up to the 24⁻ and 23⁻ states, respectively. These two bands are associated with the two-quasiparticle configuration at lower spins and the four-quasiparticle configuration at higher spins. The two 4-quasiparticle bands show exceptionally close near-degeneracy in the excitation energies as well as close similarity in their alignments and B(M1)/B(E2) reduced transition probability ratios. This is one of the best cases of near degeneracy in partner bands observed to date, probably resulting from a chiral geometry in the angular momentum space. This is the first pair of 4-quasiparticle bands associated with chiral symmetry.

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