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A multiplet of chiral bands in 194Tl: DSAM lifetime measurements

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Abstract content
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When a left-handed and a right-handed nuclear systems form in the angular momentum space, a pair of nearly degenerate rotational bands is observed. To identify chiral symmetry most important is to establish near-degeneracy of the B(M1) and B(E2) transition probabilities of the partner bands, which needs dedicated lifetime measurements. Such measurements were performed for four bands of 194Tl, including the pair of four-quasiparticle chiral bands with close near-degeneracy. The lifetime measurements confirm the excellent near-degeneracy in this pair and suggest that a third band may be closely involved in the chiral symmetry scenario.

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