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The Scissors Mode: A Building Block of Low-Energy Nuclear Structure

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The magnetic dipole scissors mode and its implications for the low-energy structure of heavy nuclei are discussed. Salient features like its orbital nature, the correlation of the strength with ground-state deformation, the collectivity and a systematic description within a sum-rule approach are reviewed [1]. The scissors mode is also observed in the quasicontinuum and may be related to the phenomenon of an enhancement of the γ strength function at very low energies [2,3]. Finally, the implications of a recent conjecture that the ground states of all heavy deformed nuclei show some degree of triaxiality [4] on the understanding of the scissors mode are investigated.
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[2] M. Guttormsen et al., Phys. Rev. C 106, 034314 (2022).
[3] F.-Q. Chen et al., Phys. Rev. Lett. 134, 082502 (2025).
[4] T. Otsuka et al., Eur. Phys. J. A 61, 126 (2025).

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