

Effect of the Coulomb force on fission fragment angular momenta

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Nuclear fission produces fragments endowed with typically half a dozen units of angular momentum each. After scission has occurred and the fragments recede, they are still interacting via the Coulomb force which exerts an undulating but steadily decreasing torque on deformed fragments. This may lead to an amplification of their rotations, in effect shifting the fragment spin distributions upwards by 1-2 units. Complete dynamical calculations are carried out to illustrate the effect quantitatively, but its essential features can be understood by simple perturbative considerations.

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