α-decays of even-even actinides and superheavy nuclei to the first rotational 2^+ states of daughter nuclei

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The alpha-decays of even-even isotopes of actinides and superheavy nuclei to the ground 0^+ and first 2^+ states of their daughter nuclei are studied. The conditions for the maximum intensity of alpha-decay from the ground state to the lowest 2^+ state are analyzed in detail based on existing experimental data. For the alpha-decays of heavy nuclei up to Og, the half-lives and population probabilities of the 0^+ and 2^+ states of the daughter nucleus are described and predicted employing the preformed cluster model.

Notes: