

FOUR-NEUTRON DECAY CORRELATIONS

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Mechanism of simultaneous non-sequential four-neutron ($4n$) emission (or "true" $4n$ -decay) has been considered in phenomenological five-body approach.

This approach is analogous to the model of the direct decay to the continuum often applied to $2n$ - and $2p$ -decays. It is demonstrated that $4n$ -decay fragments should have specific energy and angular correlations reflecting strong spatial correlations of "valence" nucleons orbiting in their $4n$ -precursors. Due to the Pauli exclusion principle, the valence neutrons are pushed to the symmetry-allowed configurations in the $4n$ -precursor structure, which causes a "Pauli focusing" effect.

Prospects of the observation of the Pauli focusing have been considered for the $4n$ -precursor ${}^7\text{H}$. Fingerprints of its nuclear structure or/and decay dynamics are predicted.

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