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Duration of classicality of a degenerate quantum scalar field

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Dark matter axions and other highly degenerate bosonic fluids are commonly described by classical field equations. As our recent work, we evaluated the duration of classicality of a homogeneous condensate with attractive contact interactions. In their classical descriptions, such condensate persists forever. Taking into account the quantum description, however, parametric resonance causes quanta to jump in pairs out of the condensate into other modes. We estimated in each case the time scale over which the condensate is depleted.

Parallel Session

Dark Matter, Astroparticle Physics

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