

Abstract Submitted
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Beam wobbler system and dynamic stabilization of Rayleigh-Taylor instability for heavy ion fusion¹ HONG QIN, RONALD DAVIDSON, Princeton University — In recent studies of heavy ion fusion systems, it has been proposed to use a beam wobbler system to achieve uniform energy deposition on the target and to reduce the initial seeding for the Rayleigh-Taylor instability (RTI). Wobblers are set of biased electrical plates on the beam path driven by RF voltages to actively control the centroid dynamics of the beam so that different beam slices are delivered to different locations on the target. In addition, it turns out that the time-dependence of the energy deposition rendered by the wobbler system also introduces a significant dynamic stabilization effect for the RT instability. The two effects make the beam wobbler system an effective tool to suppress the RT instability for heavy ion fusion.

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Hong Qin
Princeton University

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