

Abstract Submitted
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Dust Acoustic Waves As a Possible Trigger Mechanism For The Rayleigh-Taylor Instability In a Dusty Plasma¹ KATHERINE PACHA, ROBERT MERLINO, Univ of Iowa — Further analysis of the video images as well as new theory concerning the interpretation of a previous experiment on the observation of the Taylor instability in a dusty plasma [K. A. Pacha, *et. al.*, *Phys. Plasmas* **19**, 014501 (2012)] are presented. The re-examination of the data indicates that the Rayleigh-Taylor instability (RTI) may be triggered by the sudden intensification of high amplitude dust acoustic waves at the boundary between high and low dust density regions. Also, as pointed out and analyzed theoretically by Avinash and Sen [*Phys. Plasmas* **22**, 083707 (2015)], *the curvature of the boundary allows for a perpendicular component of the gravitational acceleration at the boundary between the low and high dust density regions which can drive a RTI.*

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Katherine Pacha
Univ of Iowa

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