

Abstract Submitted
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Simulation of solitons and mode coupling in Trivelpiece-Gould modes in a finite-length non-neutral plasma GRANT HART, MITCHELL CLINGO, Brigham Young University — We use a 2-D (r-z) PIC code to model axisymmetric Trivelpiece-Gould oscillations in a finite-length pure-ion plasma. At high amplitude these modes undergo mode-conversion between low-lying modes. They also can produce nonlinear states that are similar in appearance to solitons propagating on top of the linear normal modes. When the underlying normal modes undergo conversion from one to another this affects the soliton part of the state. This interaction can make one of the solitons disappear. The mechanism and parameters of this effect will be discussed.

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