

Abstract Submitted  
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**Nonlinear ion acoustic waves in multi-ion species plasmas at low electron to ion temperature ratios** THOMAS CHAPMAN, RICHARD BERGER, EDWARD WILLIAMS, BRUCE COHEN, LLNL, Livermore, CA, USA, STEPHAN BRUNNER, Ecole Polytechnique Federal de Lausanne, CRPP-PPB, CH-1015 Lausanne, Switzerland — The nonlinear evolution of ion acoustic waves in multi-ion species plasmas is studied in the context of stimulated Brillouin scattering. With the aid of Vlasov simulations, multi-wavelength systems are investigated over a range of ratios of electron to ion temperatures relevant to current inertial confinement fusion experiments. The impact of nonlinear effects, such as harmonic generation, ion acoustic wave decay and both electron and ion trapping, and the interplay between the comparably damped fast and slow ion acoustic wave modes are demonstrated. *This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344 and funded by the Laboratory Research and Development Program at LLNL under project tracking code 12-ERD-061.*

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