

## Relativistic parametric instabilities of large amplitude Alfven waves

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Experimental data suggest that the decay instability of large amplitude Alfven waves is one of the essential processes taking place in space plasmas, particularly in planetary and interplanetary foreshock regions. The same process should also exist in astrophysical plasmas. Here, however, the dependence of the Lorentz factor on the wave amplitude should be included. In this meeting we discuss the parametric instabilities of large amplitude Alfven waves in a relativistic plasma, by performing One-dimensional relativistic full particle simulations.