

## 多イオン種プラズマ中の非 MHD 波動励起と粒子加速

# 松清 修一 [1]  
[1] 九大・総理工

### Generation of non-MHD waves and associated particle acceleration in a multi-ion-species plasma

# Shuichi Matsukiyo[1]  
[1] ESST Kyushu Univ.

<http://www.esst.kyushu-u.ac.jp/~space/index.html>

The acceleration mechanism of high energy particles during a solar flare is one of the outstanding issues. Because the plasma on the solar surface includes a number of heavy ions, the dispersion relation of the corresponding plasma may be different from that of a single ion species plasma. In particular, the low frequency waves with phase velocities much larger than Alfvén speed are allowed to propagate parallel and anti-parallel to the ambient magnetic field in the multi-ion-species plasma. It is revealed by PIC simulation that these waves are nonlinearly generated in the course of long time evolution of the ion cyclotron instability driven by temperature anisotropy which is often observed during the solar flare. The mechanisms of the wave excitation and associated particle acceleration are discussed.