

The Effect of Equatorial noise on the Proton Density Structure of the Inner Van Allen Belt

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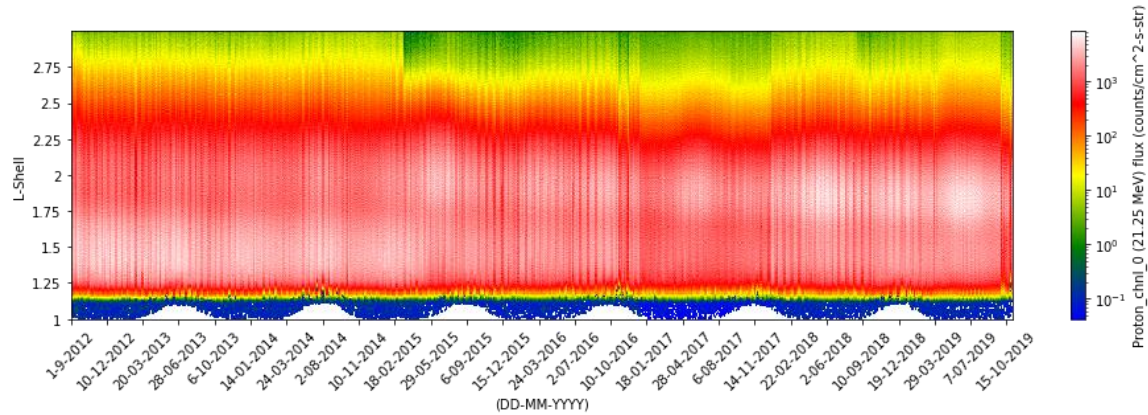
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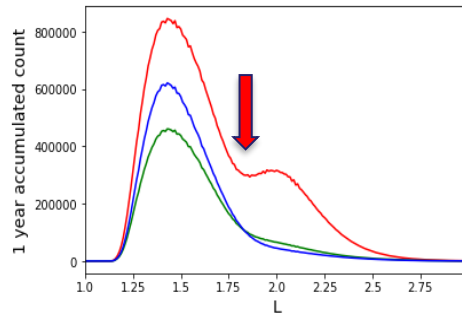




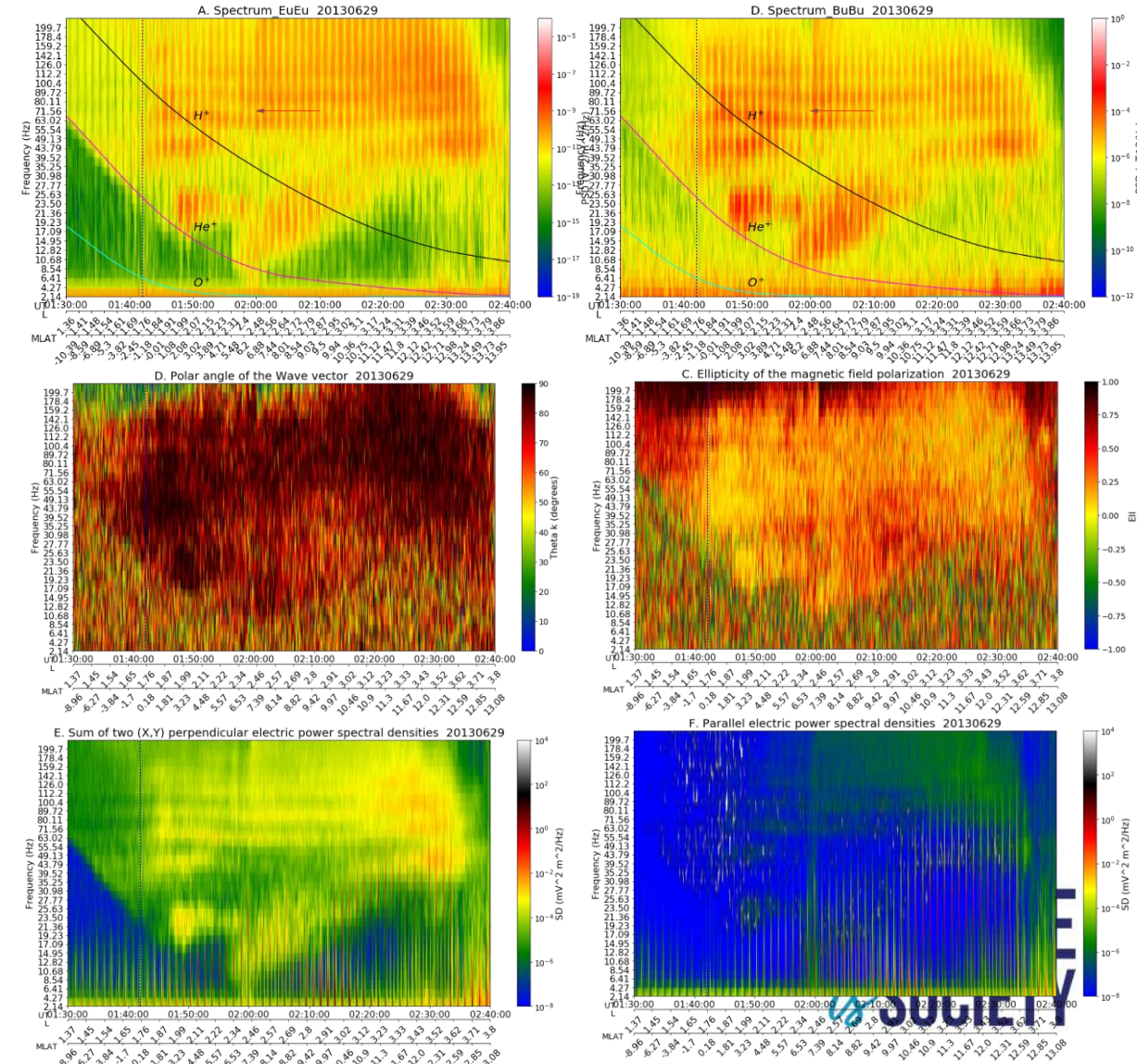
ANOMALOUS PROTON DENSITY STRUCTURE



Proton flux- 21.25MeV-red, 27.6MeV-green, 35.9MeV-blue



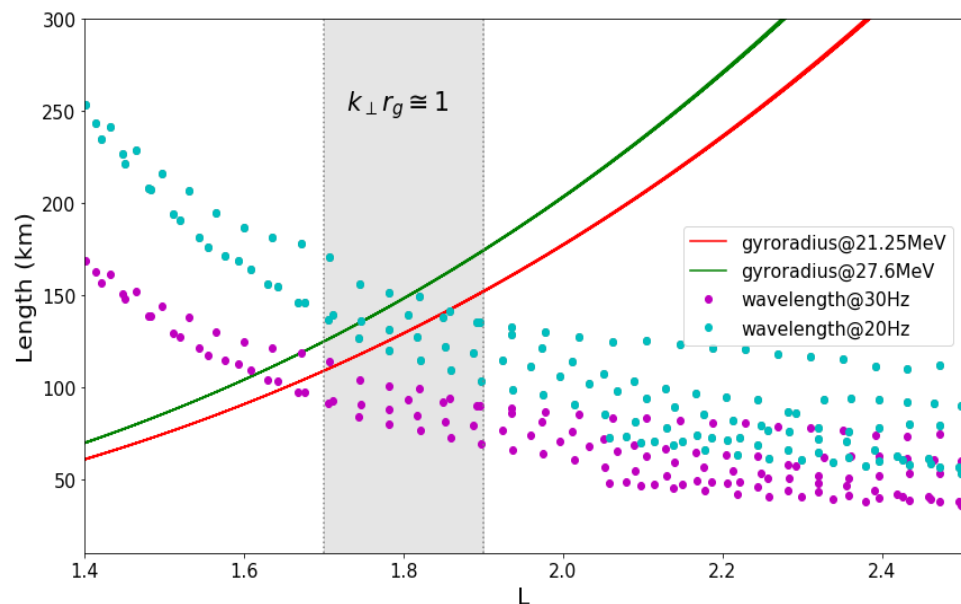
- Do Wave-particle interactions have any role to play?



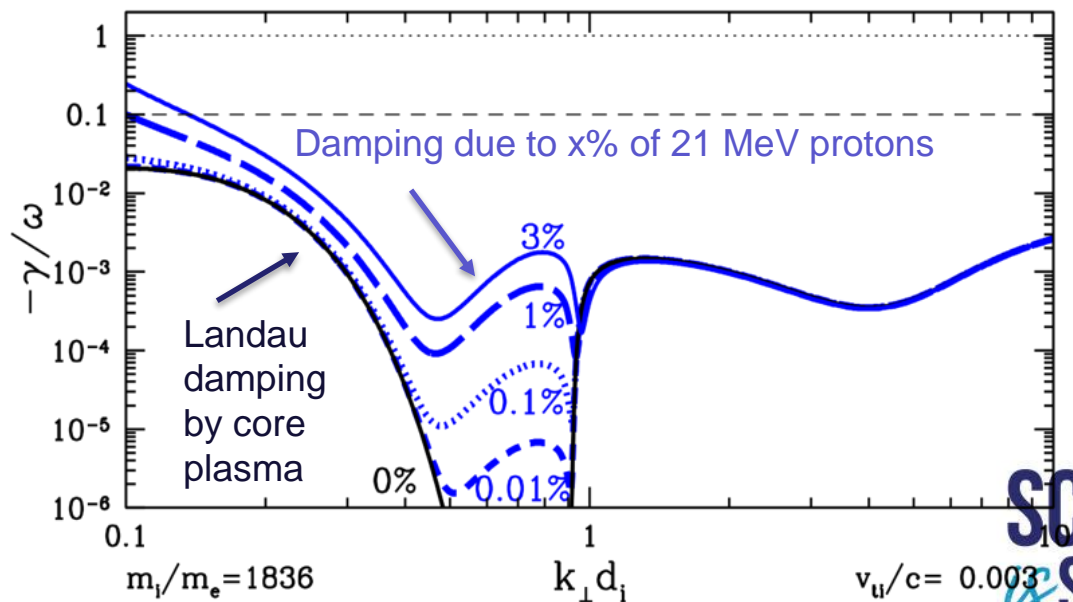
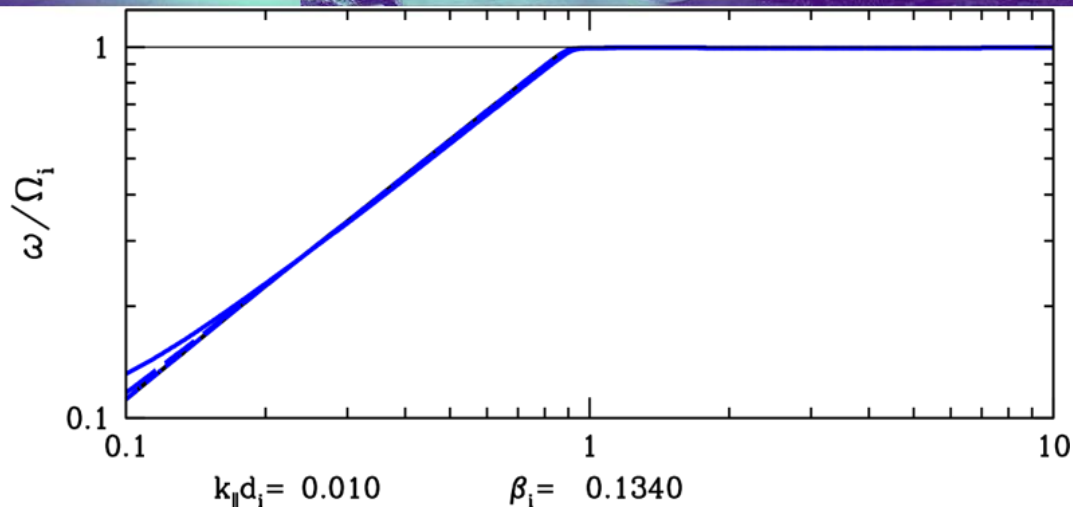


ENERGIZATION OF 21 MEV PROTONS

Wave-particle interaction



- Larmor radius of ~21 MeV protons = Wavelength of the magnetosonic wave.
- Wave electric field was perpendicular to the background magnetic field.





FLR INTERACTION AFFECT THE DENSITY STRUCTURE OF INNER BELT

- Finite Larmor radius (FLR) interactions in the magnetosphere are known in the tail region, boundary layer and cusp region. Now FLR interaction is reported in the innerbelt region too.
- Update inner belt model.
- Does it shed any light on the unknown energy dependent proton loss mechanism reported in Selesnick and Albert (2019)? Is it due to reorganization of protons?

THANK YOU

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