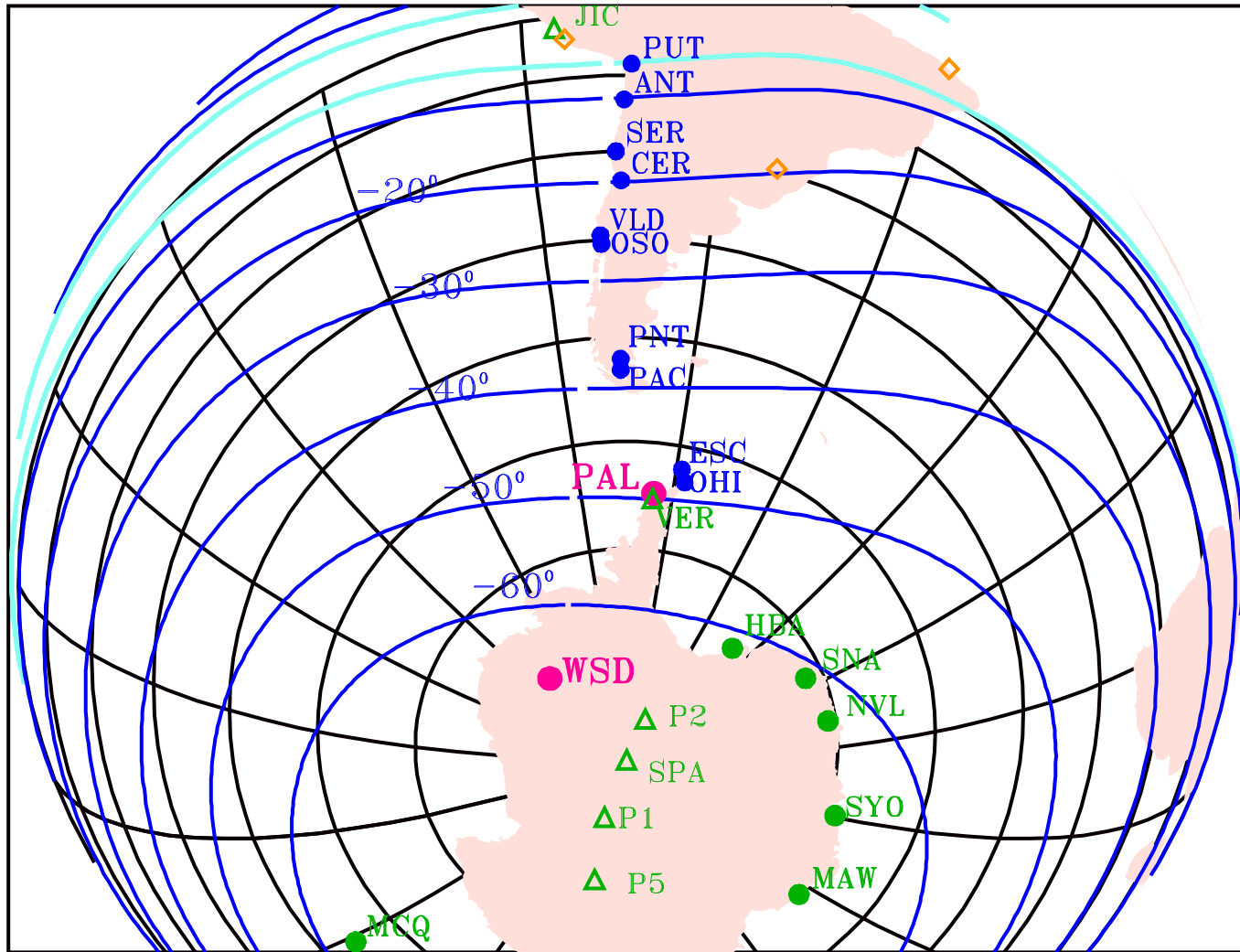


STUDY OF SPECTRA FLUCTUATIONS OF THE GEOMAGNETIC FIELD USING DATA FROM THEMIS SATELLITES AND SAMBA MAGNETOMETERS.

Victor Pinto
UCLA

2nd SAMBA-iMAGS Meeting
November 4th, 2013
Punta Arenas, Chile

Map of SAMBA magnetometers



FLRs and THEMIS

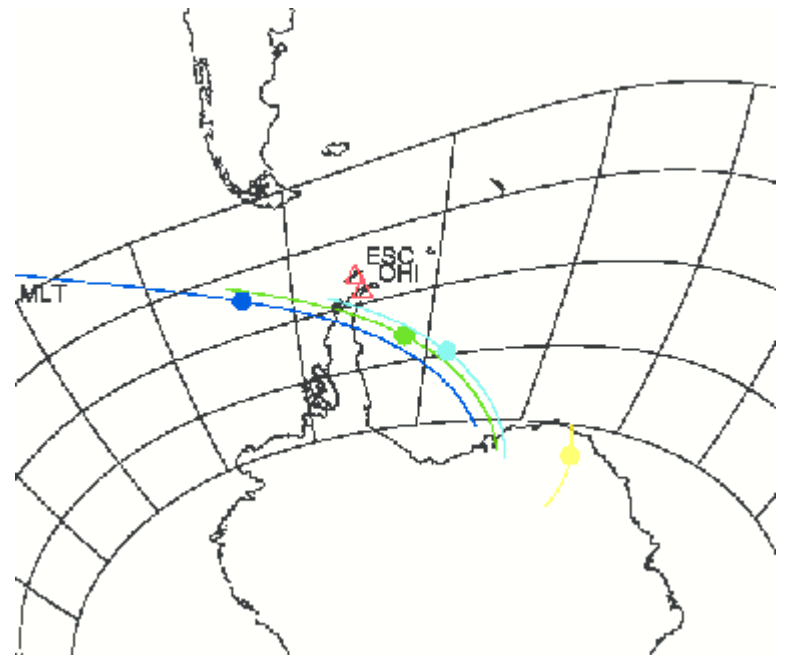
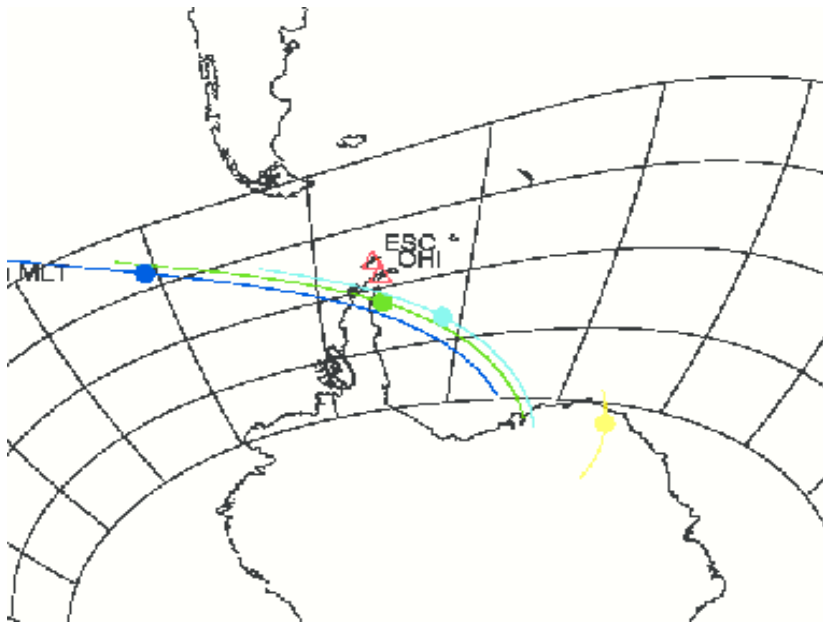
The frequency of the local resonance can be used to determine the equatorial mass density of the resonating flux tube. The assumption is that of a dipole magnetic field and that the mass density, ρ , varies **along** the magnetic field line as

$$\rho = \rho_{eq} (LRE/R)^m$$

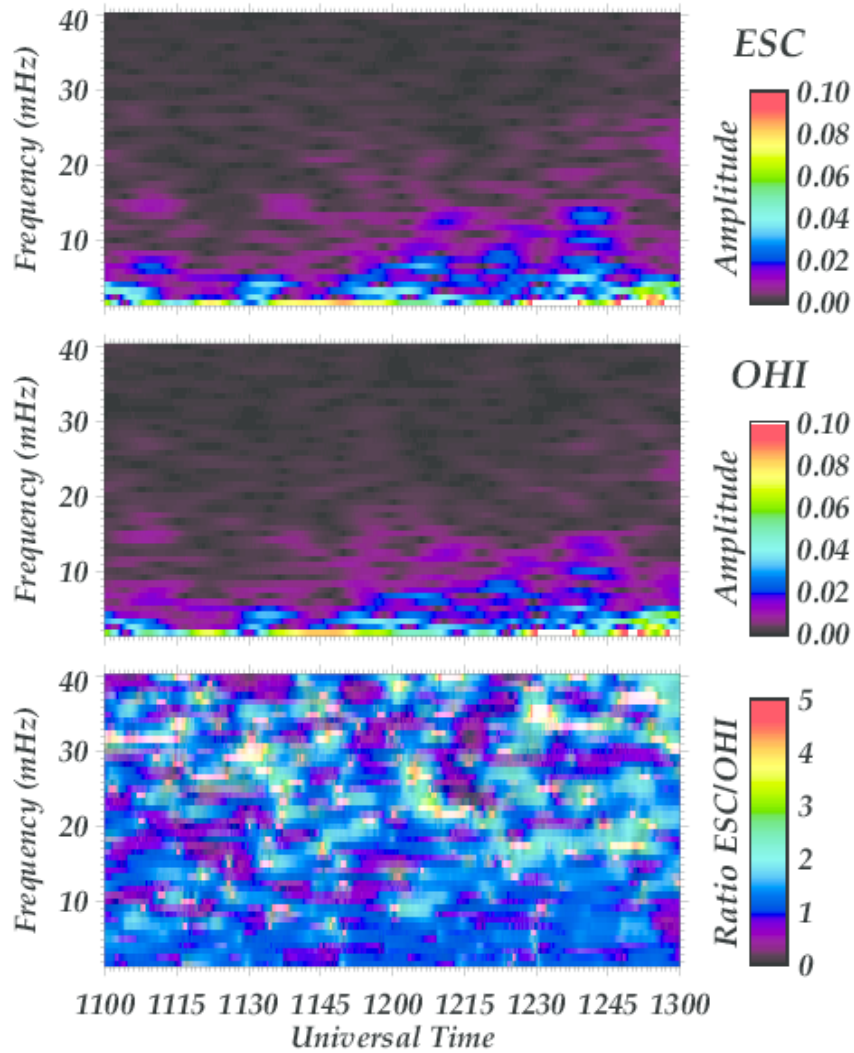
where m is the power law by which the density drops off along the field line.

The idea is obtain a similar measurement of the FLR using THEMIS satellites passing by the ground stations or SAMBA array used to compute the original FLR

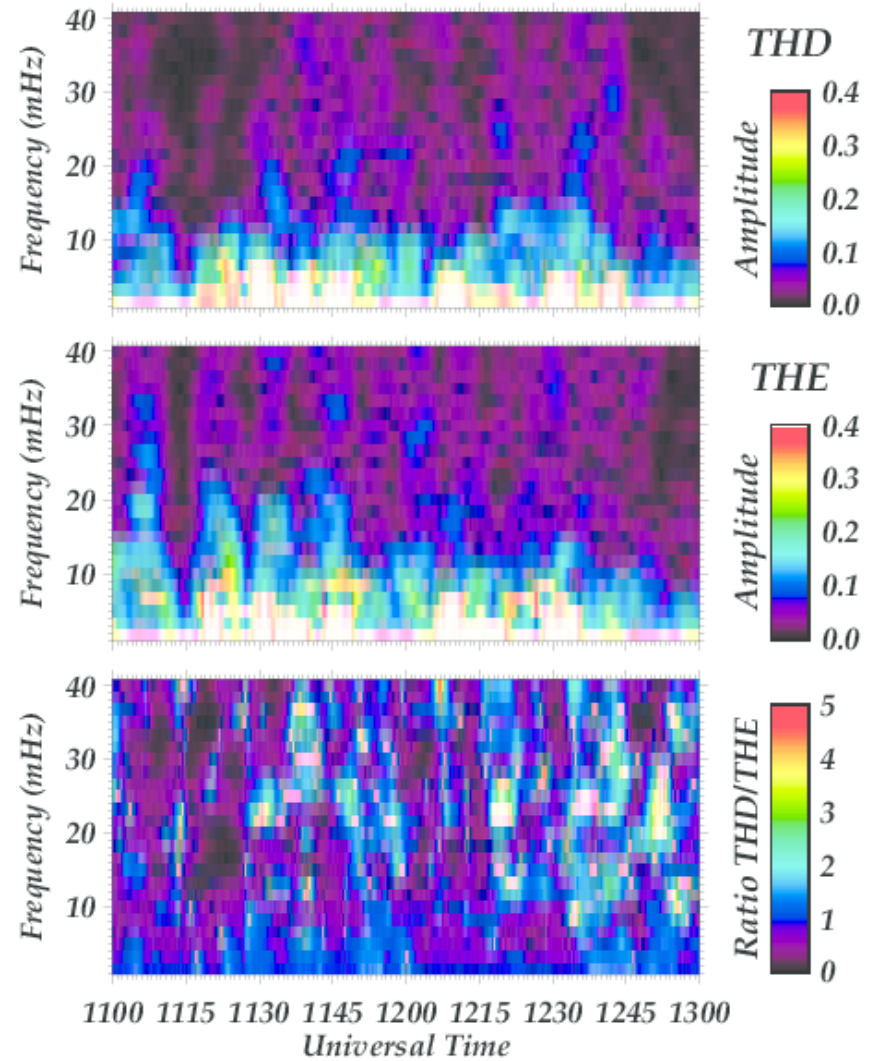
Estimating conjugates



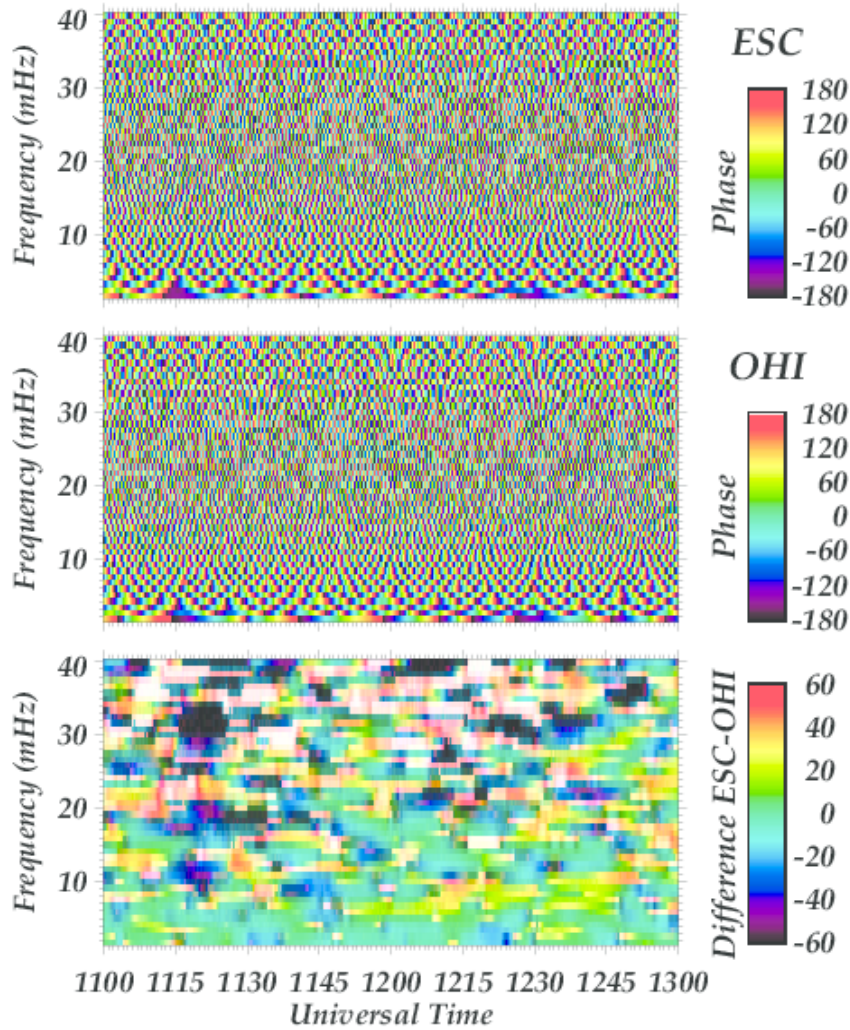
Ratio ESC/OHI, 16 June 2007 (day 167)



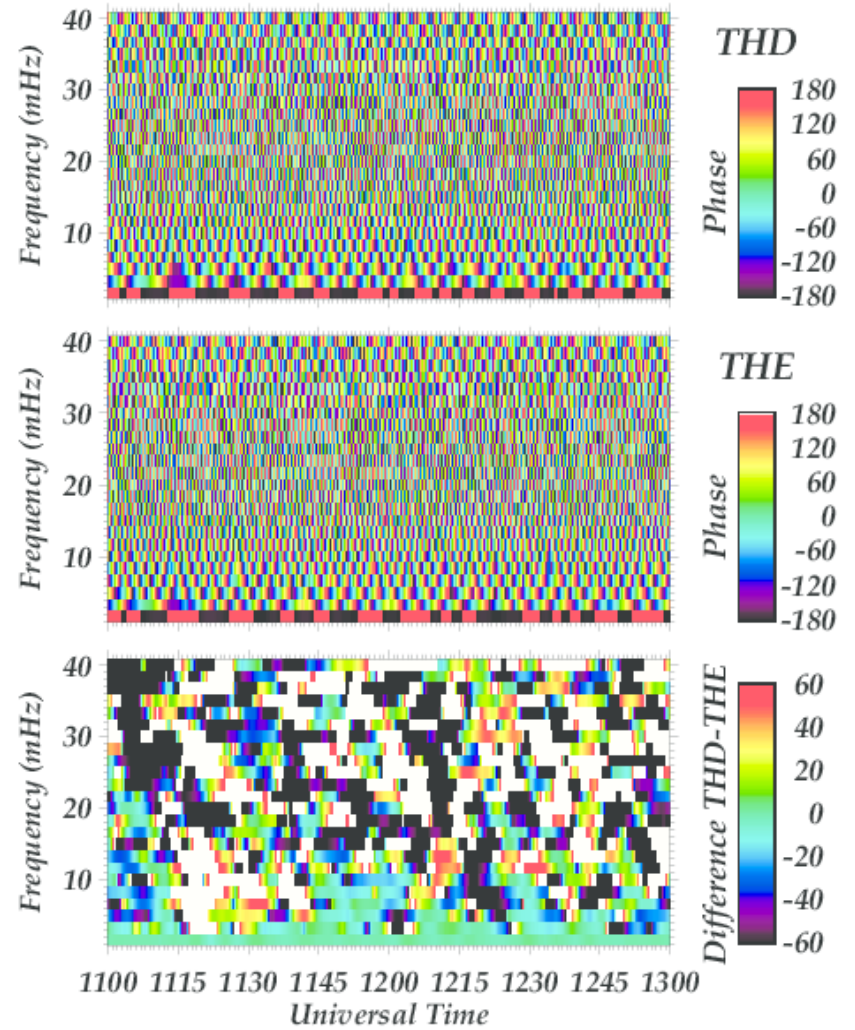
Ratio THD/THE, 16 June 2007 (day 167)



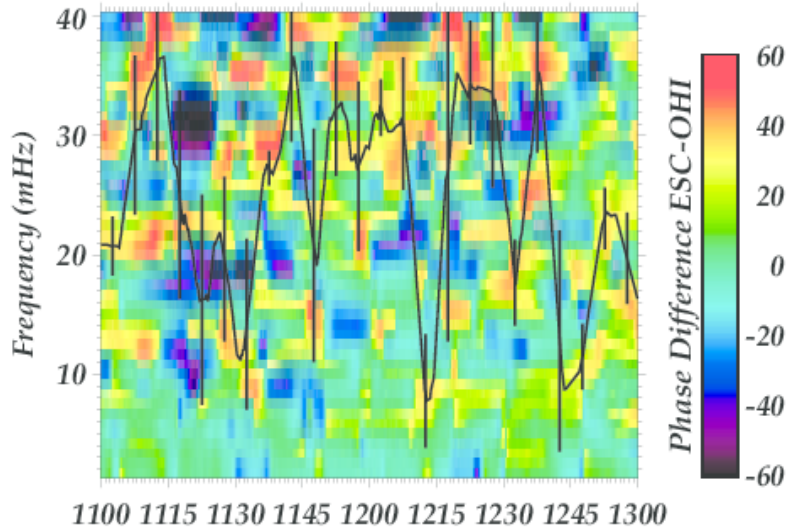
Difference ESC-OHI, 16 June 2007 (day 167)



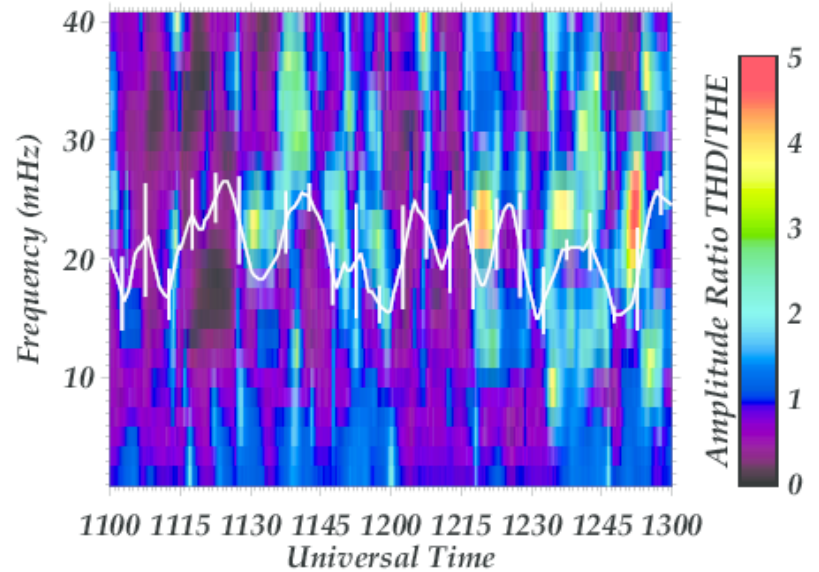
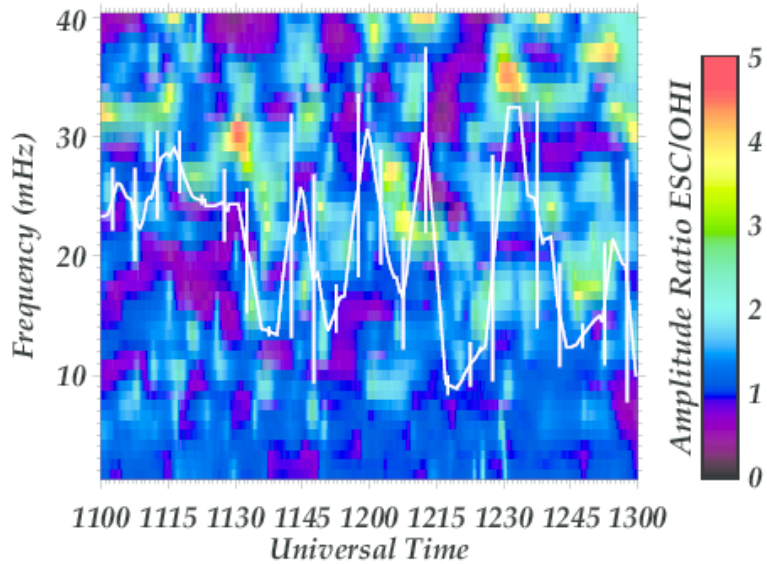
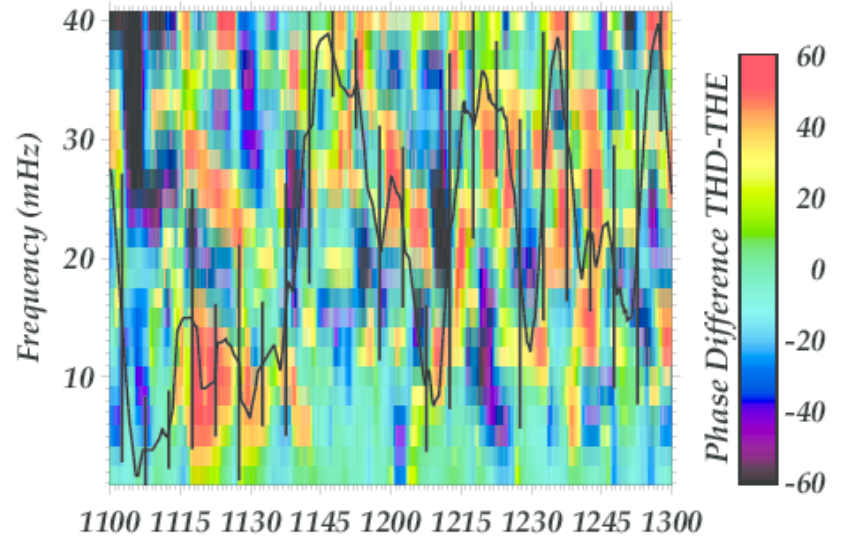
Difference THD-THE, 16 June 2007 (day 167)



Fourier FLR plots, 16 June 2007 (day 167)

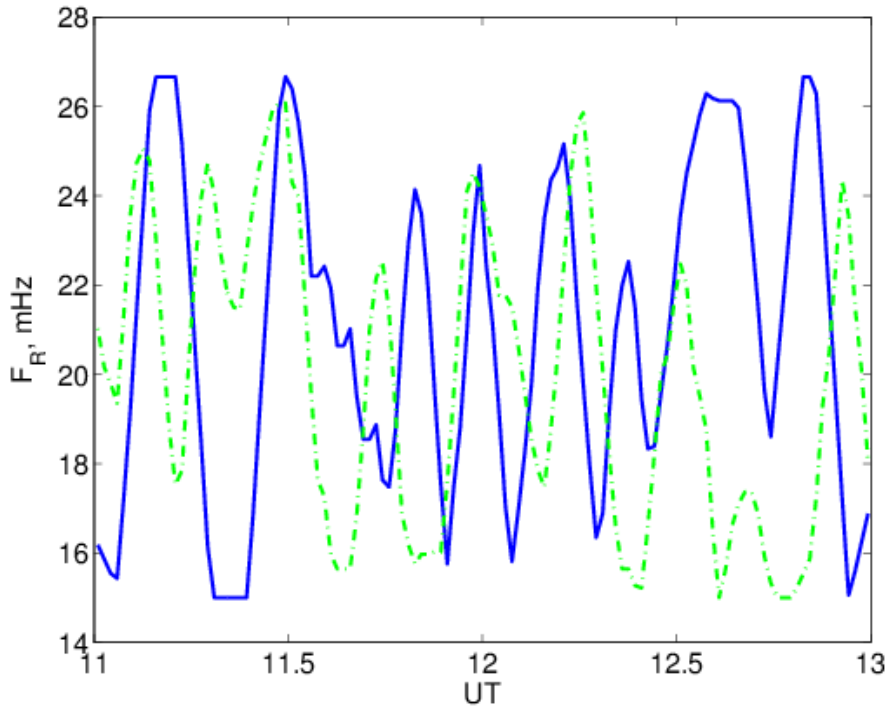


Fourier FLR plots, 16 June 2007 (day 167)

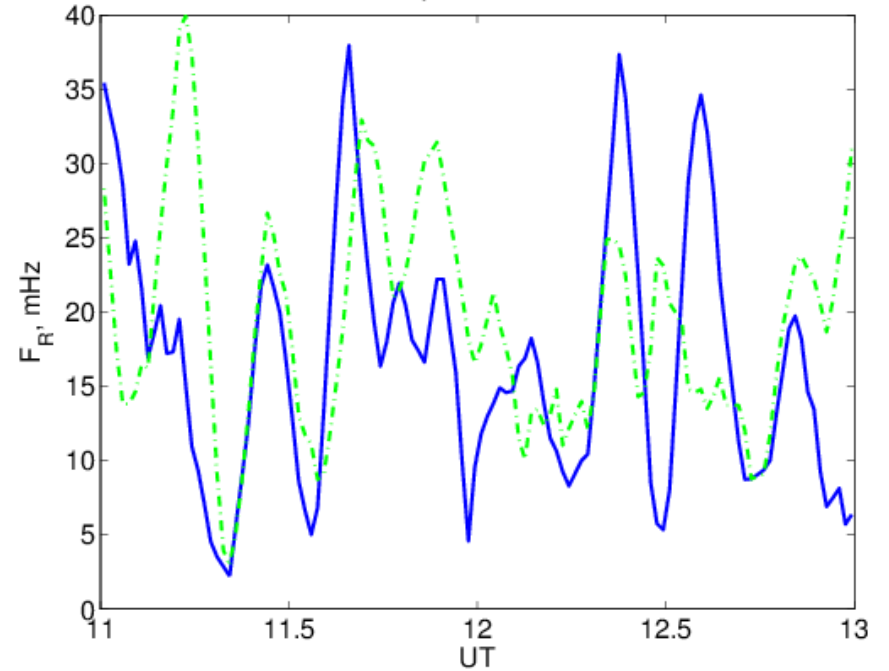


Comparing Phases and Ratios

Phase Difference



Amplitude Ratio



Thanks

