In search of the radial extent of turbulent eddies

- The position of the microwave antennas and their characteristics are input, where the user inputs $\Delta k$, $k$, and $(\eta/n)$. The fluctuations are then related to density fluctuations (e.g. radial correlations).

- Reflectometry can penetrate the plasma non-perturbatively.

- The study of the radial extent of these eddies is therefore of great interest, leading to particle and energy transport barriers (e.g. H-Modes).

- Wave turbulent eddies.

- The sensitivity of the microwaves in O-mode to density fluctuations in the tenuous plasma.

- Vacuum: $\lambda$ is a physical quantity. $\lambda = \frac{\gamma}{\nu}$, where $\gamma$ is the normalized cross-coherence. $\nu$ is the frequency. $\nu$ is calculated as a function of $\nu_0$ and $\Delta f$. It is seen that the $\nu$ increases with the $\nu_0$.

- For statistically significant results, many runs are made (>$500$) so simulated IQ data from each simulation run.

- The 3 channels share transmitting (XTMR) and receiving (RCVR) antennas located at the antenna plane.

- A detailed power scan of the variable frequency channel close to 112GHz will be performed to show the effect of $\Delta k$ and $(\eta/n)$ on the fluctuation parameters.

- The addition of random noise in the simulated system shows that for $S/N$~$1$, any signal attenuation is much stronger than showing plasma structure when reflecting off of the steep pedestal region (closer to antennas and larger separations).

Future Work

- The most common term in the analysis and interpretation of the variable frequency channel.

- Additional scans on the variable frequency channel close to 112GHz will be performed. The signals show strong decoherence in the 0.5 cm for $\eta/n=1\%$ even at $\nu_0$ close to $\nu$.

- Typical operation consists of four periods, followed by four staircases short enough to study the variable frequency channel when reflecting off the steep pedestal region.

- The e-folding length of the distribution of $\nu_0$ cutoffs in stationary plasmas (~250 ms).

- The addition of artificial noise to ne cutoff in the variable frequency channel is calculated.

- The addition of artificial noise to ne cutoff in the variable frequency channel at different steps ($\Delta f$).

- The addition of artificial noise to ne cutoff in the variable frequency channel is calculated as a function of fac. It is seen that the $\nu$ increases with the fac.

- The graphical interface ElFresco developed by E. Feibush et al. from 0-1.5 and the S/N increase peakness is of interest due to the variable frequency channel. The signals show strong decoherence in the 0.5 cm for $\eta/n=1\%$ even at $\nu_0$ close to $\nu$.

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