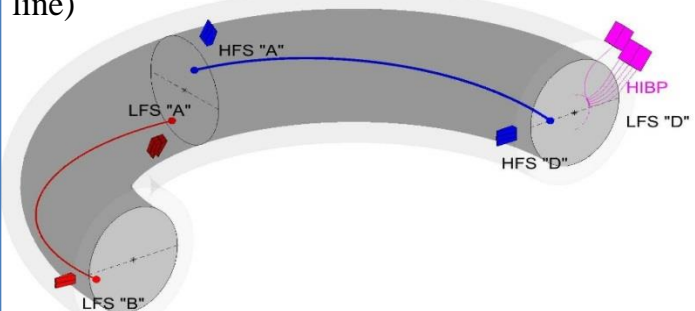


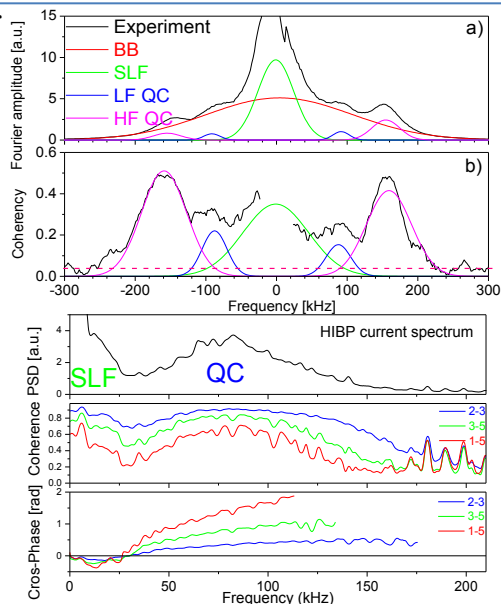


3D structure of density fluctuations in T-10 tokamak and new approach for current profile estimation

Density fluctuations were investigated with reflectometry at 4 poloidal angles and 5 channel Heavy Ion Beam Probe Long Range Correlation (LRC) measured at LFS (red line) and HFS (blue line)



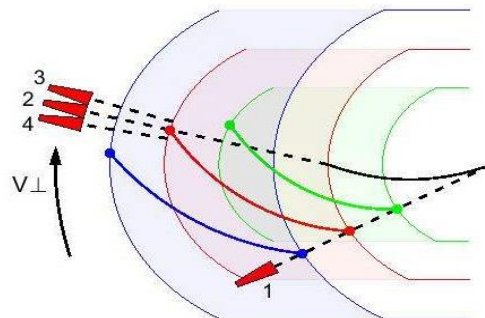
Reflectometry (top) and HIBP (bottom) observe Quasi-Coherent (QC) and Stochastic Low Frequency (SLF) turbulence types



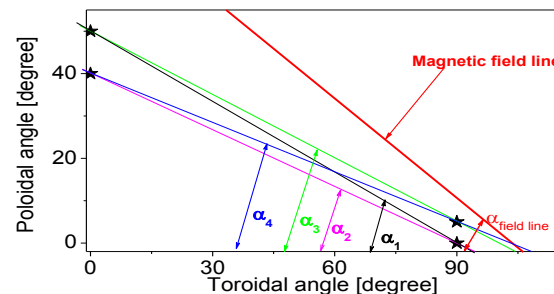
Goals: confirmation of the different turbulence types and complete characterization of their properties by means of the radial correlation measurements at several poloidal angles and the longitudinal propagation of different fluctuation types along the magnetic field line by means of LRC at High and Low Field Side (HFS/LFS)

Principles of LRC experiments

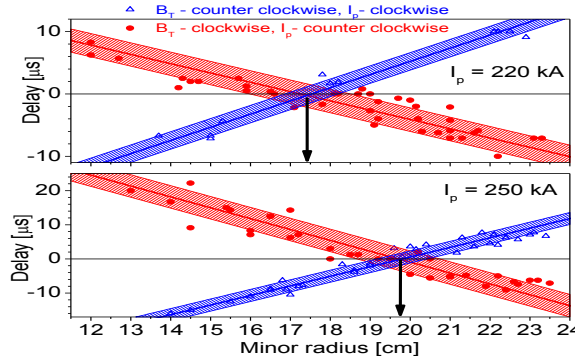
Reflection radius variation by change of launched frequency



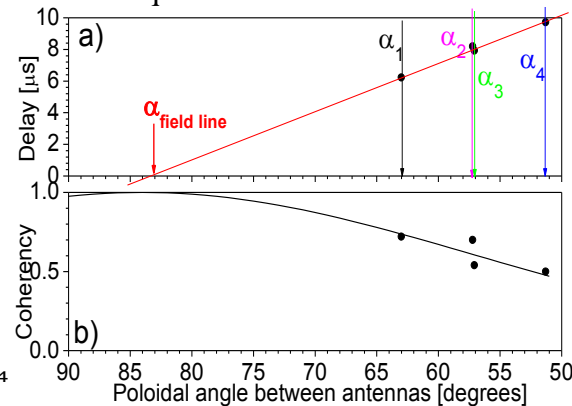
Simultaneous probing with several antennas (stars) at fixed frequency



Results of LRC with radius variation at LFS for quasi-coherent fluctuations



Results of LRC with several antennas at HFS for quasi-coherent fluctuations



Results: Previous classification of fluctuation types was confirmed with HIBP; BB fluctuations have low correlation length and generated locally at each poloidal angle; QC and SLF fluctuations have longitudinal correlation length that is significantly higher than 2.5 m.; QC resulted from the excitation of the modes with high poloidal m number; LRC was successful. Thus such technique was proposed for future experiments to estimate current profiles, using TAE modes.