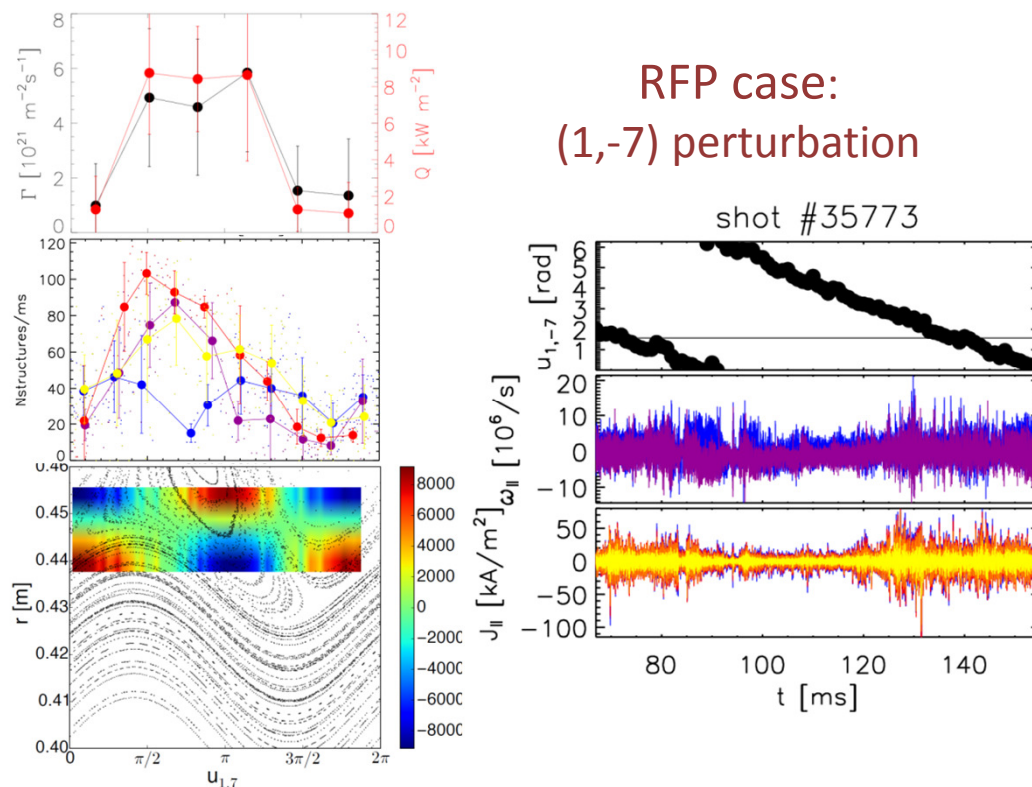


Turbulent electromagnetic filaments in actively modulated toroidal plasma edge

EX/P1-40

Background: edge plasma filaments are observed in all magnetic configurations and their electromagnetic (EM) features can play a specific important role in edge transport (i. e EM ELMs). Magnetic perturbations (MP) are widely studied as promising tool for limiting their impact on plasma facing components.



RFP case:
(1,-7) perturbation

Experiments: MP applied both in RFP and tokamak configuration in RFX-mod. The $J_{||}$ and $\omega_{||}$ associated to EM filaments were monitored in detail.

Results: EM filaments and the related particle and energy transport exhibit the same periodicity of the local magnetic topology.

A selection of the filament vorticity is observed according to the local flow shear, as modulated by the applied MP.

Perspectives: These observations hint at the challenging possibility of active control of EM filaments and their related transport by modulating the local magnetic topology.