

TH/P3-33, N. Kasuya, *et al.*,

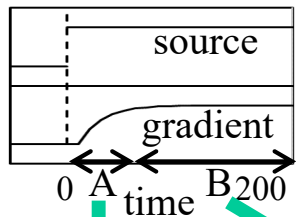
“Numerical Diagnostics of Turbulent Transport in Three-Dimensional Magnetic Configurations”

Numerical diagnostics to capture turbulent dynamics in helical plasmas

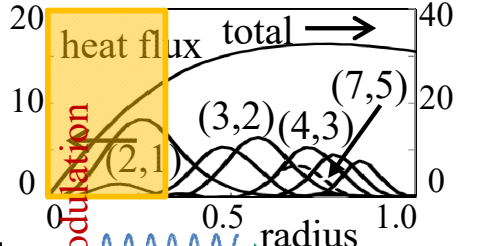
Modulation propagation

(in simplified geometry)

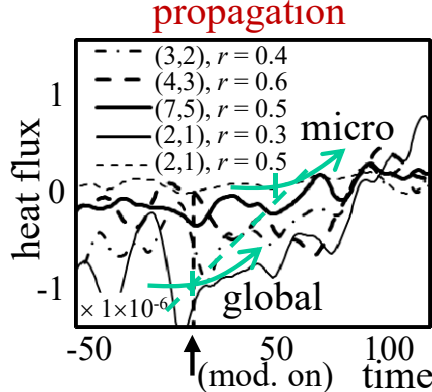
Source modulation simulation



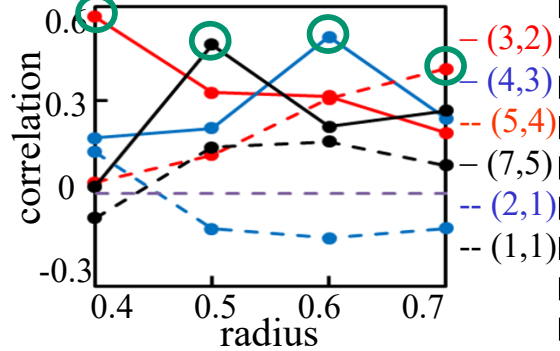
Radial distribution of fluctuations [MW/m²]



Response of each mode in A



in B leading drive

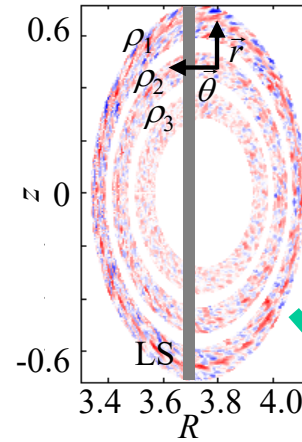


Successive response of leading linearly-unstable modes for spreading

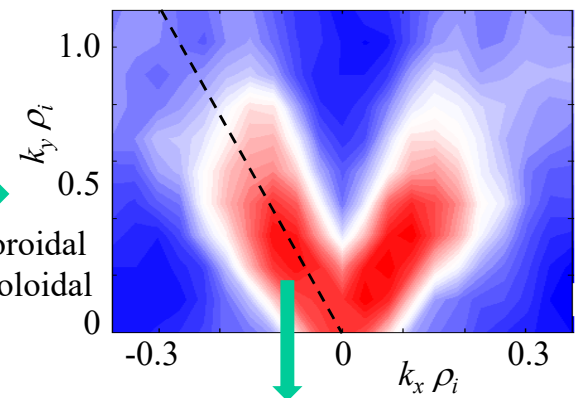
Synthetic diagnostic

(in real geometry)

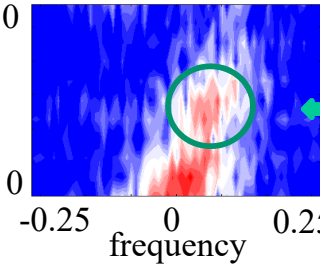
ITG turbulence by gyrokinetic simulation



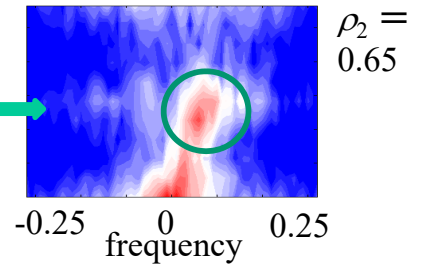
PCI measurement (line-integrated spectrum)



local spectrum



extracted spectrum



ITG :

$k \rho_i \sim 0.4$

$f L_n / v_{ti} \sim 0.05$

distinguishable

Quantitative comparison of fluctuation spectrum with limited spatial resolution