Critical Gradient Model (CGM) *predicts* the same trend for neutron losses vs time as in NSTX elevated q_min discharges

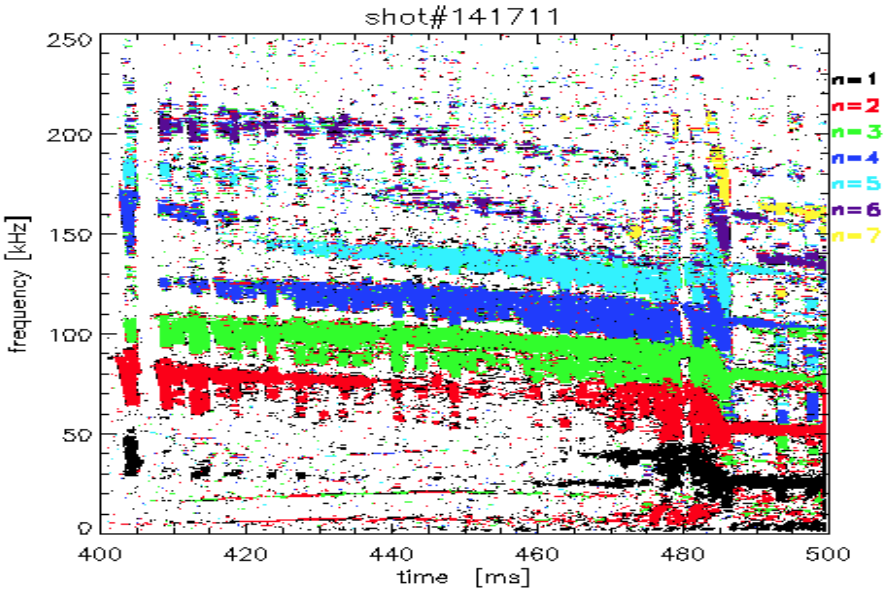
Multiple TAE discharge is chosen for CGM validations

n=1-7 are observed.

n=2-6 are used in NOVA-K for normalization.

Rotation is included and important for CGM model ion Landau damping, drive.

Drive/dampings are not large, gamma/omega <5%.



CGM model shows reasonable agreement for NSTX analyzed plasma, but underestimate losses for DIII-D

We believe the perturbative treatment is appropriate for NSTX as the drive and dampings are small,

whereas in DIII-D plasma AEs could be strongly unperturbative.

High a/R in NSTX may be the reason for agreement of perturbative linear analysis of CGM with the neutron fluxes. Drive increases towards the avalanche event.

Avalanche at ~480msec may include more complicated nonlinear physics beyond CGM.