Proposal for experiment on NSTX within MHD EGT in 2007.

“Alfven Cascades on NSTX as an indication of Reversed Shear and estimate of diagnostic potential of ACs for optimising ITB scenarios” M.P. Gryaznevich, S.E.Sharapov, UKAEA, UK.

NSTX milestone R(07-3). ***This experiment is part of ITPA MDC-9 experiment.***

- Alfven Cascades are good indicators of reversed shear configuration
- Clustering of ACs with different n’s is uniquely associated with time evolution of q(min). This information is routinely used for ITB scenarios optimisation on JET and DIII-D.
- AC diagnostics are available on NSTX.
- Although STs were using NBI for more than 10 years, ACs have been only recently identified on MAST.
- Some significant experimental time was needed on MAST to unambiguously identify ACs. Using MAST experience, we can assist NSTX to reduce this time as we know what scans are needed and what conditions are most promising for ACs identification. We made experiments in scenarios similar to some typical NSTX ones, using both low-energy old Oak Ridge source, and high-energy PINI source, which is closer to NSTX sources.
- Once ACs are identified, old NSTX data may be searched for similar events.
- Two experimental sessions will be required, plus some piggy-back.