

# Effect of Neoclassical Tearing Mode on Fast Ion Distribution

- Collaboration with HL-2A can contribute to NTM and EP studies on NSTX-U
  - On HL-2A, Neoclassical tearing mode (NTM) can be suppressed or controlled with electron cyclotron current drive (ECCD).
  - NTM can cause significant fast ion loss or redistribution
- HL-2A has been actively developing fast ion diagnostics
  - Tangential-FIDA system just started to acquire data, FIDA imaging under development
  - A suite of fast ion diagnostics including fast ion lost probe, neutron camera, neutron/gamma-ray spectrometer
- Experimental proposal
  - Personnel from UCI & PPPL: **G. Z. Hao**, W. W. Heidbrink, D. Liu, M. Podesta et al.
  - Experimental plan: adjust ECCD power to change NTM amplitude; acquire FIDA and other fast ion diagnostic data; (3) 10-15 shots
  - Goals: (1) Validation of FIDA signals on HL-2A; (2) Effect of NTM on fast ion distribution