

# UCLA microwave diagnostics available for mode structure measurements

## New Reflectometers Systems:

*Currently* available:

- Multichannel reflectometer array:  $1.1 - 3.1 \times 10^{19} \text{ m}^{-3}$  (30 – 50 GHz)
  - 8 multiplexed channels (30, 32.5, 35, 37.5, 42.5, 45, 47.5 and 50 GHz)
  - *replaces* 5 multiplexed channel array (30 – 50 GHz)

Available *late April*:

- *High density* multichannel reflectometer array:  $3.75 - 7.0 \times 10^{19} \text{ m}^{-3}$  (55 – 75 GHz)
  - 8 multiplexed channels (55, 57.5, 60.0, 62.5, 67.5, 70, 72.5 and 75 GHz)
  - an *existing system* is currently in use on DIII-D — available during DIII-D shutdown
  - a *new system* dedicated for NSTX is under construction — possibly available sooner
- 5 channel closely spaced ( $\Delta f = 350\text{MHz}$ ) reflectometer array
  - frequency adjustable (Test Cell entry required):  $3.4 - 7.4 \times 10^{19} \text{ m}^{-3}$  (53 GHz – 78 GHz)
  - channels span 1.4 GHz ( $\sim 2\%$  of center frequency  $\Rightarrow$  short radial span)
  - existing system is currently in use on DIII-D — available during DIII-D shutdown

## Polarimetry in development

- 288 GHz radial chord polarimeter — *goal is to install spring of 2010*
  - measure line integrated  $n \cdot B$  near midplane: constrain EFIT/LRDFIT
  - measurement of magnetic fluctuations to be explored (*student thesis*)