

**SPECTRAL MEASUREMENT AND ARCHIVAL OF NSTX DATA
USING A HIGH-SPEED DIGITIZER***

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Digitally speaking, things have sped up considerably since the introduction of CAMAC in 1969. Although CAMAC is still very much alive and well as a workhorse in the physics research laboratory community, more and more physicists and engineers have been turning to computer-based digitizers for their sampling needs. Increases in sampling rates and bandwidth have allowed us to use one such digitizer in acquiring data from a particular Langmuir probe on the National Spherical Torus Experiment (NSTX) here at PPPL. This digitizer replaced a previous setup comprised of a spectrum analyzer fed from a fiber link and interfaced by GPIB through ethernet. While this setup worked quite nicely, only one event could be logged per shot. With the new digitizer, records as long as 1.2 seconds (at 100 megasamples/sec) can be archived for later analysis. In addition, we were able to use Labview to automatically generate a predetermined number of FFT “slices” of the complete record, which are then stored via MDS Plus for immediate viewing in the control room.

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