

Beam experiment at CESR/TA

- 1st phase: Demonstration of nm-sensitivity for beam motion observation
- 2nd and 3rd phase: demonstration of quad stabilization on a nm-level

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- Installation of high sensitivity electronics onto an existing BPM at CESR: BBQ electronics. (M.Gasior et al. (CERN)); successfully used for tune diagnostics at CERN, FNAL, BNL
 - Using CESR with low emittance beams (order of micrometers)
 - Optimization of this electronics for very low frequencies: 10 Hz – 100Hz; observation of beam spectra; selection of narrow frequency window with lowest beam eigen-motion
 - Controlled low amplitude beam excitation through current modulation of a corrector dipole.
 - Trying to obtain a reasonable signal to noise ratio for beam oscillations of nm-size (expected measurement time: 15 minutes)