Tolerance of LLT \((\text{Code V})\)

• Mainly using Code V TOR functions for both RSM wavefront & Zernike aberrations
• TOR performs all perturbations approximately equally
Tolerance of LLT: Results

- Two different types of tolerance were done with different performance metrics: 1) RMS wavefront error and 2) SA, Coma & Astig using Zernike polynomials assuming that all the wavefront errors can be represented by wavefront errors in exit pupil.

- Perturbations including 2mm longitudinal/lateral movement of lens; 20 um longitudinal movement of PM; ,100um lateral movement of SM and angular perturbations of all elements has but a small effect on RMS wavefront error \((0.1385\lambda)\)-slide4)/SA \((0.0002\lambda)\) all of which can be compensated by defocus of SM.

- Largest effects of perturbations are on Coma-including trefoil\((0.1704\lambda)\)-slide5).

- Effects of perturbations on SA & Astigmatism are small/non-existent.

- Monte Carlo (random perturbations) tolerance yielded similar results for Geometric Spot Size diameter (want to redo for RMS /Zernike –need to finish write macro for this).
Next Steps

- Make larger perturbations (including perturbation of conic constant of PM)
- Redo Monte Carlo simulation for RMS wavefront / Zernike errors in XP