

# SRW Updates

- Power at lens surface
- Off-axis beam in kicker (now with kick calculated based on spatial overlap of field and electron)

# Power Delivered to Lens

- For helical undulator,  $K=5.12$ , 16 mm/side square lens, average power to lens is 17 mW for 0.1 mA beam
- Damage thresholds  $\sim 0.1 \text{ J/cm}^2$   
<https://aip.scitation.org/doi/10.1063/1.2734366>
- Thermal stresses at few  $\text{mJ/cm}^2$  (aluminum and beryllium numbers)  
<https://aip.scitation.org/doi/10.1063/1.1590747>
- Each of our pulses delivers  $\sim 40 \text{ nJ}$  – not always perfect comparison based on different wavelengths and pulse lengths, but don't feel too concerned

# Off-axis Beam in Kicker

- For  $K=5.12$  case, simulate beam off-axis by 100 microns in  $x$ , 50 microns in  $y$
- Energy transfer of 187 meV  
(had 225 meV in on-axis case – 17% reduction)

# Sloppy Models Update

- If make beam-size Hessian with different misalignments, only first 6 knobs consistent – if try to minimize with 8 knobs and repeat minimization, occasional non-orthogonality arises (001960269 misalignments)
- Tried to fix this with knobs to fix local dispersion and coupling, but only somewhat helpful – does better on lattice 001960269, but no clear preference overall