Wiggler Field Calculations

– Wiggler Nr 2 Continued Search for Skew Quad –
– Effect of Transverse Tilt of Upper Half –

1. **Wiggler Nr 3 Comparison to Field Integral Measurements**
   - Rotate upper half by $\pm$ 1mm (0.5 degrees, 9 mrad)

     $\Rightarrow$ 8-pole model shows negligible skew quad component

     $\Rightarrow$ 7-pole gives skew quad component about half as large as measured

     $\Rightarrow$ SSC reports tolerance of 1 mrad from measurements

     $\Rightarrow$ Can exclude such a tilt as the source !

2. **Hall Probe Measurements of Wiggler 2**
   - No evidence of significant tilt

3. **Now running models with parabolic coil extensions**
   - First simulation of changing coil cross section and current density within coil
   - Single-pole warm test indicate such extensions are $\lesssim$ 10 mils

     $\Rightarrow$ Seems unlikely to generate magnitude of skew quad observed