3-Pole and 7-Pole Wiggler Field Calculations

– Also Results from Fitting Procedure with CERN MINUIT Package –

1. **Repeated Calculations Comparing Horizontal Uniformity to Measurements for 3-Pole, 20-cm Period Prototype**
   - Now using quadratic interpolation shown to produce more stable result
   - Basic result that calculations give less horizontal variation than measurement unchanged

     ⇒ Reminder: This problem likely to reappear with 7-pole wiggler. Depends on BH curve.
   - Results provided to ST to reproduce his comparison of curvatures

2. **7-Pole Wiggler Field Calculations for 60, 85, 110, 135, 161, 185 A Now Available**
   - These calculations done for wiggler with gap increased by 2 mm to 7.82 cm

3. **Calculated Transverse Field Components at Position of External Current Leads**
   - Peak B_X and B_Y coincide in z, each about 2-3 kG.

4. **MINUIT Package Fitting Procedures Now Running (for days) on Linux and OSF**
   - Increased number of 4-parameter terms from 20 to 23, χ^2 still improving
   - At present level of accuracy, observe big y dependence for $y > 2.0\ cm$

     ⇒ Presently fitting only up to $y = 2.0\ cm$. Problem for tracking comparison.
   - Residuals in B_Y less than $\lesssim 100\ G$
   - Table of field values and resulting fit function provided to DLR for first attempt at tracking comparison