# Wiggler Field Calculations

**– Peak Fields for Main Current of 95.0 kA in 7-Pole Wiggler Nr 2 –**
**– Trim Current vs Field Integral in 7-Pole Wiggler Nr 2 –**
**– Full 8/8 Model for Wiggler Nr 3 Obtained –**

## 1. Peak Fields in 7-Pole Wiggler Nr 2 with Measured Coil Offsets

- 660 Turns means 144 A to get 95.0 kA in main coils

| Z position (cm) | $B_{\mathrm{Y}}$ (gauss) |
|---|---|
| -57.5 | -15591 |
| -40.0 | 21341 |
| -20.0 | -21493 |
| 0.0 | 21429 |
| 20.0 | -21500 |
| 40.0 | 21352 |
| 57.5 | -15605 |

## 2. Trim Current vs Field Integral in 7-Pole Wiggler Nr 2

- Minimum horizontal kick requires trim current $\gtrsim 7$ A
- Residual field integral of $B_{\mathrm{Y}}$ greater than 10 gauss-meters on axis

## 3. Full 8/8 8-Pole Model for Wiggler 3

- Calculation requires one day for tracking and map with 8 mm steps, five days for 2mm steps

  The small effects of the dowel- and bolt-holes are not yet included

  ⇒ The coil offsets (DHR) induce a horizontal kick of about 200 $\mu$rad

  ⇒ The skew quad component is similar to that measured for Wiggler 1, but is only on one side