Wiggler Field Calculations

– Results for 8-pole Model with Dowel-Pin Holes –
– Improved Field Calculation and Fit for 7-Pole 1.9 T Field –
– Some Progress on 7-Pole 8/8 Model –

1. Effect of Dowel-Pin Holes in 8-Pole Model

- Total of 24 holes added, 8 of them oblong
  - ⇒ Horizontal uniformity slightly improved (10^{-4} level)
  - ⇒ Transfer functions show small changes for the better
  - ⇒ Horizontal displacement at X=0 can be corrected with trim current change of $\lesssim$ 50 mA

2. Improved Field Calculation and Fit (see talks of 10/18/02 and 11/1/02)

- Now completed 7-pole 1.9 T field for comparison with machine studies
  - ⇒ Comparison of linear integrals for table and field illustrates degree of improvement: about an order of magnitude !
    (see also DLR talk on transfer functions of 11/1/02)

3. Some Progress on 8/8 7-Pole Model

- Succeeded in meshing 7-pole model with full range in transverse dimensions
- Extension to full range in Z stubbornly refuses to mesh
  - ⇒ At present, still unable to model coil displacements in Wiggler 2
  - ⇒ Measurements of coil displacements obtained, but contradictory