

Dear Andy,

please find attached the field files of the large aperture permanent magnet wiggler to publish on the web as required during the workshop. The first ones (TEXT and EXCEL) show the vertical field component in the horizontal symmetry plane of the magnet: rows correspond to a fixed longitudinal position, columns to a fixed horizontal position. The second ones show the longitudinal field component in the vertical symmetry plane; again rows correspond to a fixed longitudinal position along the wiggler axis, while columns correspond to a fixed vertical position. Let me just remark that these fields have been obtained by pasting, sorting and multiplying by suitable factors the maps by Albert Babayan, which have been calculated only between the wiggler center and the first half pole (from 0 to 10cm) and on the terminal pole between 70 and 85 cm from the wiggler center, and did not yield a vanishing second field integral.

I would like to remark (maybe it was not sufficiently clear during my presentation) that in my talk the comparison between horizontal and vertical third order components was made on the first wiggler proposal with 6 cm pole width. So I have repeated the same calculation on the large aperture design (8 cm pole width) and the result is shown in the attached picture. In addition I have modified my fitting program so that now the fit is performed along a line perpendicular to the beam trajectory instead of perpendicular to the wiggler axis as before. The difference however is small, angles being less than 5 mrad, and the integrated horizontal octupole comes out to be about 10% smaller than before. Now the horizontal integral is 24.5 T/m<sup>2</sup> against 5.1 T/m<sup>2</sup> vertical. There is a formula in the "wiggler bible" by Richard Walker (CAS Advanced, Rhodes, Greece, September 1993) referring to an infinitely large pole width and sinusoidal approximation for the field, which gives a value of about 12 T/m<sup>2</sup> for the vertical integrated octupole. Maybe the horizontal octupole somehow compensates the vertical one in our case.

Thank you again for organizing so well our workshop. Best regards.

Miro