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ENG. Division

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MEETING - MINUTES

OF THE STUDY GROUP FOR DIFFERENT QUADRUPOLES AND MAGNETS

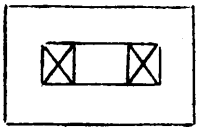
5 JUIN 1962

At the meeting of the Study-Group for Improving Secondary Beams and PS-Extracted Beam Facilities it was decided that a study group of Messrs Geibel, King, Munday, Wilson and Ašner should investigate the possibilities of designing special (better) quadrupoles and magnets.

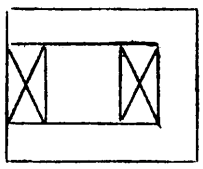
This group held its first meeting on May the 5th, and agreed on the following working programme.

I. Bending Magnets

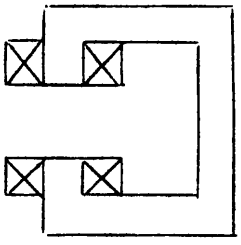
1.1.) Messrs Wilson and Ašner will design and compare by model-measurements the following types of bending magnets with the standard CERN 1m magnet :



Window-frame type



Window-frame C-type



Classical C-type

All magnets shall have the same parametres, i.e. : B = 14 kG $\pm$ 1 o/o over a width of 2 x 16 cm, a gap height of 14 cm, the normal CERN magnet-impedance of 0.2 ... 0.25 ohm and a power consumption of P< 330 kW (type III Generator).

1.2.) Parallel to this exercise, Mr. King will investigate, if optimum values for bending magnet-length and width can be determined.

II. Quadrupoles

2.1.) The following quadrupoles with a 30 cm-aperture shall be designed and compared by model-measurements :

a) the "Classical" type

b) the "Wilson" type

c) the "Desy" type

d) the "Eng.Div." type

All quadrupoles shall have the following parametres :

Field gradient x iron length $g \cdot L = 900 \left[\frac{G}{cm} \cdot m\right]$,

$R = 0.4$ ohm

$P \leqq 330$ kW, temperature rise $\Delta t \approx 50^{\circ}C$, pressure drop

$\Delta p \leqq 15$ at.

2.2.) Mr. King will investigate the advantages and disadvantages of scaling down such "slim" quadrupoles, having a better ratio of overall dimensions against aperture, as well as the most suitable

aperture-form for the first and second quadrupole in certain beams (circular, rectangular, cross-shaped quadrupolar field region)

A. Ašner

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