

SUMMARY OF THE PROPOSED KM MEASUREMENTS

A. Messina

- 1) Kick strength and rise time for the whole K.M.
  - a) A 3,5 m delay line pick-up terminated at both ends into the characteristic impedance.  
A pick-up in air is preferable (but it must be studied)
  - b) Points of measurement  
x direction at y=0 10 mm steps from x=-60 to x=+60  
y " at x=0 10 mm " from y=-30 to y=+30
  
- 2) Kick strength and rise time for one unit
  - a) A 350 mm delay line pick-up terminated at one end into the characteristic impedance and 1) short circuited to the other end for the magnetic measurements, 2) open to the other end for detecting stray fields influence.
  - b) All the units pulsed  
x direction at y=0 10 mm steps from x=-60 to x=+60  
y " at x=0 10 mm " from y=-30 to y=+30
  - c) Magnets not pulsed
    - c1) Magnet B<sub>1</sub> not pulsed
    - c2) Magnet A<sub>1</sub> not pulsed
    - c3) Magnet A<sub>2</sub> not pulsed
    - c4) Magnet A<sub>1</sub>-A<sub>2</sub> not pulsed  
x direction at y=0 60 mm steps from x=-60 to x=+60  
y " at x=0 30 mm " from y=-30 to y=+30

3) Field measurements

- A) Field distribution in the z direction for the whole kicker at the center of the aperture Fig. 1 point O(0,0) and at 4 point A (x=0, y=+30), B(x=50, y=0), C(x=0, y=-30), D(x=-50, y=-0).  
In the -z direction (Fig. 3) 7 points for each magnet (6 under the ferrite, 1 at the center of the gap between two units).
- B) Field distribution in one unit (magnet B<sub>1</sub>, Fig. 2)  
z direction 10 mm steps from z=0 to z=+300  
x " at y=0 10 mm steps from x=-50 to x=+50  
and at y=± 35 50 mm steps from x=-50 to x=+50
- C) Ends effect (Magnet A<sub>1</sub> Fig. 3)
- 1) Coil in horizontal position (B<sub>tr</sub>)  
z direction 10 mm steps from z=-70 to z=+70  
x " 25 mm steps from x=-50 to x=+50  
y " 30 mm steps from y=-30 to y=+30
- 2) Coil in vertical position B<sub>z</sub>  
z direction at z=0, -17.5, -20, -40  
x " 25 mm steps from x=-50 to x=+50  
y " 30 mm steps from x=-30 to x=+30
- D) Field distribution at the junctions (Magnet B<sub>1</sub> junctions A<sub>1</sub>-B<sub>1</sub> and B<sub>1</sub>-A<sub>2</sub> Fig. 2)
- 1) Coil in horizontal position (B<sub>tr</sub>)  
z direction 10 mm steps from z=-70 to z=+70 and  
" z=+230 to z=+320  
x " 25 mm steps from x=-50 to x=+50  
y " 30 mm steps from y=-30 to y=+30
- 2) Coil in vertical position (B<sub>z</sub>)  
z direction at z=0, -17,5, -32, -64 and  
at z=300, 317.5, 320, 340  
x " 25 mm steps from x=-50 to x=+50  
y " 30 mm steps from y=-30 to x=+30
- a) normal conditions - all the magnets pulsed and in place
- b) magnets not pulsed
- 1) magnet B<sub>1</sub> not pulsed  
2) " A<sub>1</sub> " "  
3) " A<sub>2</sub> " "  
4) " A<sub>1</sub>-A<sub>2</sub> not pulsed

c) magnets taken out

- 1) magnet B<sub>1</sub> out
- 2) " A<sub>1</sub> "
- 3) " A<sub>2</sub> " (see case C)
- 4) " A<sub>1</sub>-A<sub>2</sub> out

4) Proposed order of execution

- 1) Kick strength and rise time for the whole magnet
- 2) Kick strength and rise time for one unit (complete)
- 3) Field measurements
  - C) end effect
  - D) junctions effect
    - a) normal conditions
    - b) magnet not pulsed
    - c) magnet taken out
  - B) field distribution in one unit
  - A) field distribution in the z direction.