Meeting on May 21st 2002

Minutes taker Ina Reichel

Those present I. Reichel, W. Wan, A. Zholents

Date May 22nd 2002

Distribution

J. Corlett
I. Reichel
D. Robin
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Overview of topics

1 Database of lattice files (I. Reichel) 3

2 Design of the first bunch compressor (I. Reichel) 3

3 Analysis of the second bunch compressor (W. Wan) 4

4 Differences between MAD and COSY (W. Wan) 4

1 Database of lattice files (I. Reichel)

We can use diskspace on the server of the project. They have a software called "Intralink" that is somewhat similar to CVS. We can use that. It runs on PCs and UNIX. Ina is working on getting everything set up there.

2 Design of the first bunch compressor (I. Reichel)

Ina presented a preliminary design based on two Triple Bend Achromats (TBA). Each achromat bends the beam 30°, i.e. 10° per bending magnet. The bending radius is about 1.7 m. The current lattice is shown in Fig 1. The overall R_{56} with this lattice is only 0.02, i.e. too small. The beamline is currently more than 10 m long and about 2.5 m wide. This size should not be a problem according to Sasha.

It needs to be found out why MAD gives positive dispersion in both "arcs" although they bend in opposite directions. This might change R_{56}.

In order to get the right R_{56} one can either change the strengths of the quads making the achromat not achromatic anymore or one can install a little compressor somewhere. Ina will study both options. Without the compressor the best solution might be to match one TBA with sensible boundary conditions for β-functions and dispersion and half the

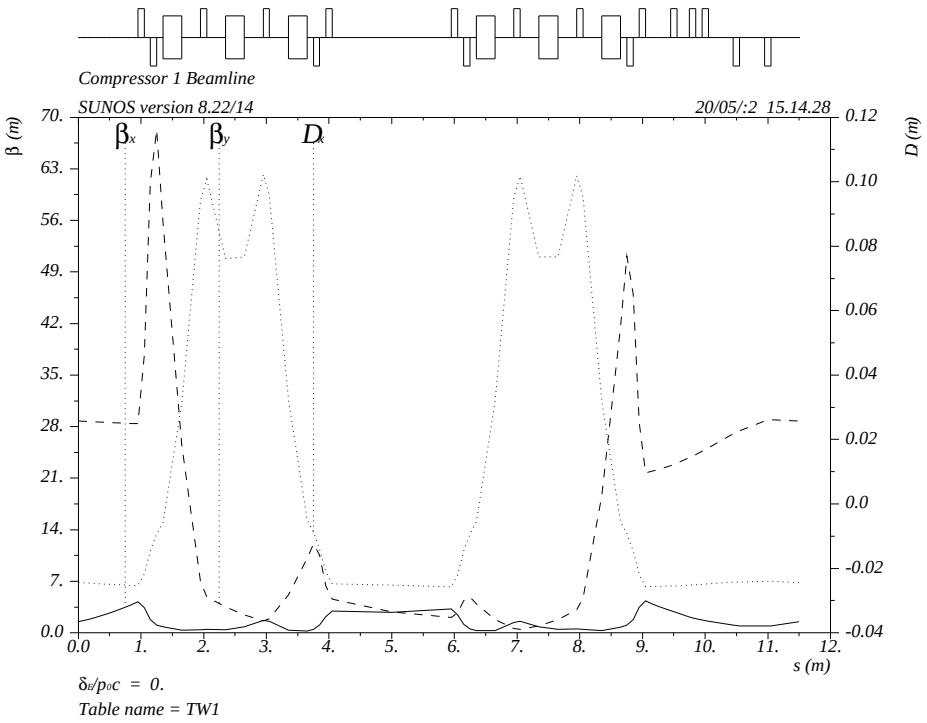

Figure 1: Preliminary lattice for the first beamline without a dedicated compressor based on two Triple Bend Achromats.

required R_{56} and then just double that and add a few quads to match to the rest of the world.

3 Analysis of the second bunch compressor (W. Wan)

Weishi presented a solution with sextupoles and some tracking results for Arc 0 to show the influence of the sextupoles. Figure 2 shows the longitudinal plane with the sextupoles. Figures 3 and 4 show that in the transverse planes the sextupoles do not significantly change the beam profile compared to the linear lattice (assuming no errors in both cases).

4 Differences between MAD and COSY (W. Wan)

For drifts MAD and COSY agree to second order, but there is a difference for bending magnets (the vertical plane is treated differently). Weishi has contacted John Jowett and Frank Schmidt at CERN but has not yet heard back from them.

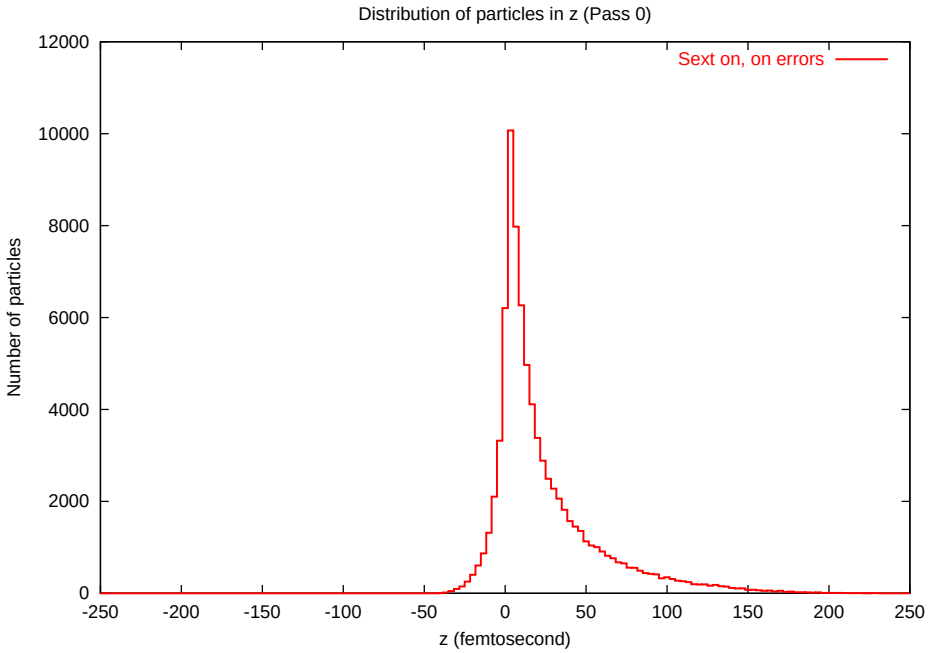

Figure 2: Tracking results for Arc 0 for the longitudinal plane with sextupoles on.

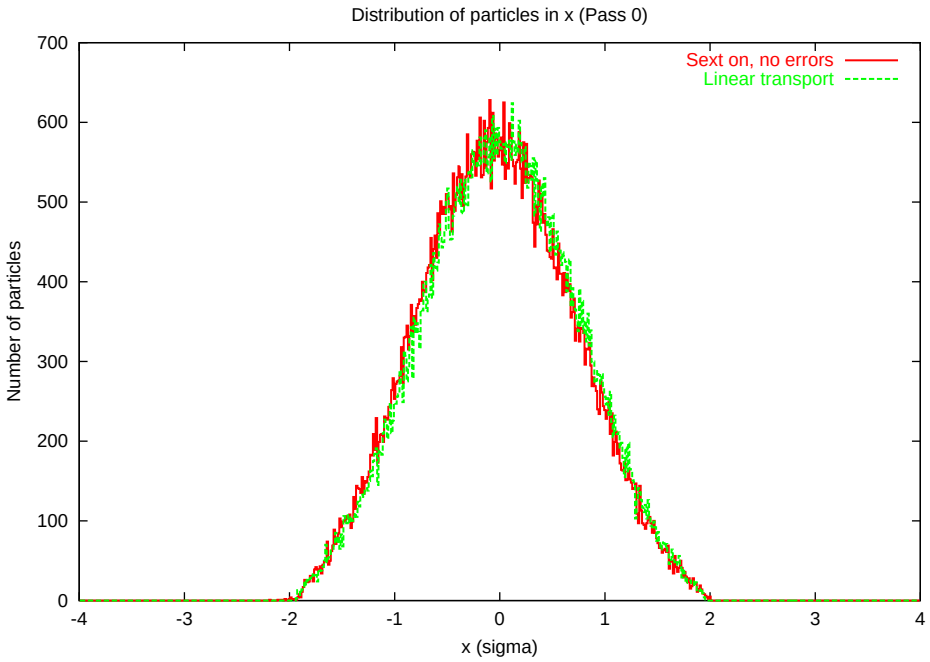

Figure 3: Tracking results for Arc 0 for the horizontal plane with the sextupoles on and with a linear model.

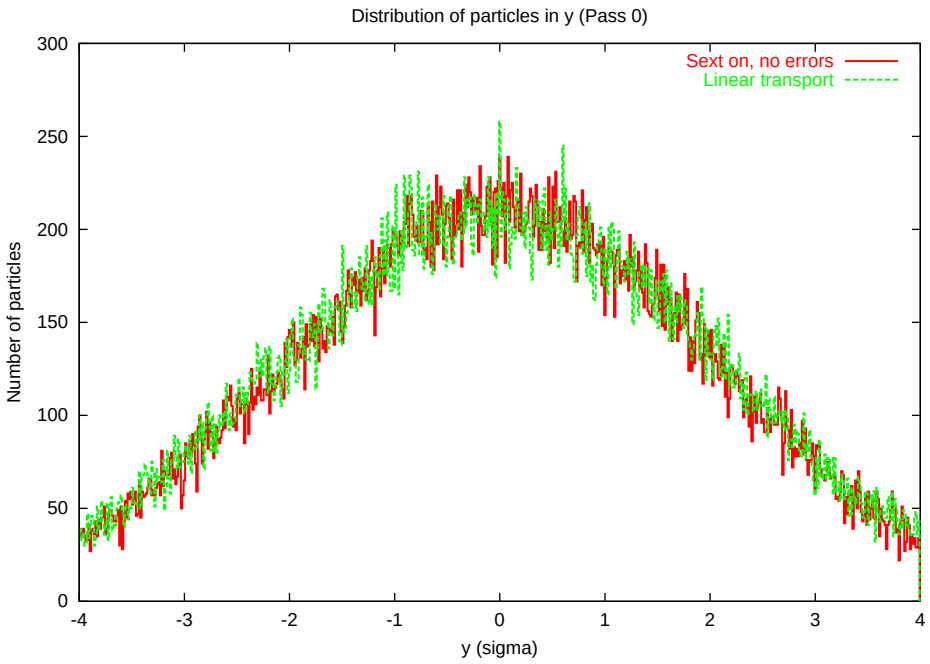

Figure 4: Tracking results for Arc 0 for the vertical plane with the sextupoles on and with a linear model.