

Meeting on July 9th 2002

Minutes taker Ina Reichel

Those present I. Reichel, S. de Santis, W. Wan, A. Wolski, A. Zholents

Date July 19 2002

Distribution

J. Corlett
I. Reichel
D. Robin
S. de Santis
W. Wan
A. Wolski
A. Zholents

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1 Tracking results using MERLIN (A. Wolski)

Andy presented first tracking results using MERLIN. He has tracked just the linac and also the whole machine. The short-range wakefields are calculated using an equation from the TESLA design report. The results for no charge show a correlation between y and z. As it shows up in the zero charge tracking it cannot be due to wake effects. Weishi thinks it is due to chromatic effects but it could also be due to RF focusing.

Andy uses the same model for the cavities that is used for TESLA so it should be the right model and include higher order effects.

Currently the RF is phased to the bunch but Andy is working on a version which keeps track of the timing for multiple passes.

Andy has not yet compared his results with Stefanos calculations.

2 Update on a design of the first bunch compressor (I. Reichel)

Ina is still trying to find a lattice without a dedicated compressor. She has some lattices which have the required R_{56} but they always have a large dispersion prime at the end

of the beamline due to the required asymmetry. Ina will try for two more days if she can find a solution. After that she will look into designing a beamline with a dedicated compressor.

3 Error studies (W. Wan)

No new results yet.

4 News from Sardinia workshop (A. Zholents)

Sasha reported on the Meeting on high brightness electron beams which took place in Sardinia the previous week.

As all other people currently working on compressors simulate coherent synchrotron radiation effects we should better do so, too, even if we think it will be no problem as reviewers might ask after having seen simulations from other machines. There are several codes available which differ in which physics effects are included, so we might have to use more than one.

The following codes seem to be most widely used:

ELEGANT by Michael Borland from ANL. This code is widely used and seems to be well documented.

TRAFFIC4 by Andreas Kabel from SLAC. This code has more physics effects included than ELEGANT.

TREDI Sasha is not sure where this code is from. He thinks it is probably from Frascati. This code seems to be more obscure than the other two codes.