

ILC DR kicker reference design based on the strip-line kicker(draft)

- 2005/08/12 KEK T.Naito

Specification:

- Kick strength 5kV(100A) power supply
- ~10Gm/electrode (10~20 strip line electrodes)
- length : 30cm long (?)
- aperture : 24mm diameter(?)
- Stability 7×10^{-4}
- Rise time $< 3.077\text{ns}(\text{min.})$
- For 3km ring $< 3.077\text{ns}$
- For 6km ring $< 6.154\text{ns}$
- Repetition rate 2.968MHz(438 buckets@1.3GHz)
- 5.936MHz(Option)

Development plans with international collaboration

- 1) Performance improvement of the pulser (the rise time, the droop within the pulse train, the repetition rate, etc.) We need to test many candidate of the pulser not only FID pulser.
- 2) Beam kick test with complementary pulse
- 3) Kick angle stability measurement by the beam
- 4) Design and fabrication of the optimized strip line electrode
- 5) Consider the 6MHz, 3000 pulses operation

Agenda:

- Working Group 3b – Damping Ring
 - 10:00 – 12:00 Wednesday, August 17, 2005
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|------------------------|--------------------------------|------|------|
| • T.Naito | ATF kicker studies | 15+5 | |
| • R.Larsen/M.Ross | Inductive adder pulsers | 15+5 | |
| • H.Weise | DESY FET pulsers | 15+5 | |
| • G.Gollin FNAL | Fourier series kicker studies | 15+5 | |
| • P.Raimondi/S.Tantawi | RF kickers | | 15+5 |
| • J.Urakawa | Instrumentation R&D at KEK-ATF | | 15+5 |
| • Discussion | | | |