

BDIR SUMMARY

ISG 11

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Talks

- Final Doublet Magnets
 - Permanent (Mihara)
 - Compact SC (Markiewicz)
- Vibration Studies
 - KEK Site & Suppression Technology (Sugahara)
 - SLAC efforts (Raubenheimer)
 - Civil Construction & Mechanics (Asiri)
- Feedback within bunch train
 - FEATHER (DeLeRue)
 - FONT-II (Markiewicz)
- Background Update (Markiewicz)
- Lattice Update (Phinney)
- Instrumentation (ODR) (Karataev)

Final Doublet Magnets

- Excellent progress on both REC and SC approaches
 - REC prototype with double rotating QD/QF collars can provide 5-1 gradient adjustment while saturated iron design provides gradients up to 2.1 T/m and special endcap materials compensate somewhat for temperature sensitivity
 - SC magnet design based on 2 coil packages in hand. Inner coil package (5 layer) will be wound and cold tested this year; vibration tests beginning

Vibration Studies

- Commercial platform stabilization scheme tested at KEK looks good
- SLAC will stabilize its prototype IR girder with commercial magnetic sensors this spring
- Twin tunnel tests in LA have given very interesting observations of vibration feedthrough in a real situation
- Geological simulation results (“SASSI”) and tests of rotating machinery on spring-isolated platforms in dual bore tunnel (SLC “Add-it”) planned

Feedback within bunch train

- FEATHER will shortly produce results while recent FONT-II runs confirm ~x10 suppression of vibration in real time with ~35ns electronic (plus time of flight) latency

Background, Lattice & Instrumentation Updates

- More detailed studies of heat & radiation load on beam line devices begun; early results show no problems; more detailed work planned
- Physics reach and energy flexibility at BOTH IRs looks excellent
- Progress on ODR

Issues Related to ITRP Decision

- Crossing Angle
- Bunch Structure
 - Backgrounds
 - Feedback
- Beam Parameters
 - Energy Spread
 - E vs. z correlation
 - Jitter Sensitivity
 - Backgrounds/Signal for Acc. Instruments & Phys. Detectors
 - Beam Power

What BDIR Can Bring to ITRP before June 2004

- Crossing Angle: Paper studies of
 - Physics w/w.o. acceptance hole of Incoming Beam
 - DIMAD simulations showing solenoid field compensation OK
 - Paper analysis of Crab Cavity performance
 - Utility/design of extraction line w/ instrumentation
- Bunch Structure & Beam Parameters
 - Detector Occupancy calculations
 - Electron ID at small theta for given # of bunches
 - Parameter sets for special running or simulation results which demonstrate that physics will not be compromised by dE/E or E vs. z

What BDIR Can Bring to ITRP before June 2004

- Vibration Suppression
 - SLAC IP Girder & Sensor results
 - KEK Table & Support Tube results
 - UCB Optical Anchor sensitivity results
 - BNL SC Final Doublet prototype results
 - KEK REC Final Doublet prototype results
 - 120 (150) Hz feedback performance results
 - FONT/FEATHER projections for jitter suppression/Luminosity recovery
 - R&D Plan
 - ATF NanoBPM system
- Beam Power
 - Collimation system design
 - Prototype collimator performance

Conclusion

A clear and concise list, or even a table, of issues and results, backed by supporting written documentation (as opposed to transparencies) should be prepared