

Advanced Accelerator Concepts Workshop

June 23-28, 2002

Mandalay Beach Resort, CA

Working Group: Beam Generation/Monitoring & Control

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The focus of Beam Generation/Monitoring & Control Group is on the generation of high-brightness electron and proton beams required for future light sources, colliders and laser or high-frequency RF (> 30 GHz) accelerators. We will also discuss various techniques for monitoring, controlling and preserving such high-brightness charge particle beams.

1. Electron Beam Source based on the RF and DC guns: High-charge RF gun, DC pulse gun, Flat Beam Generation, Polarized RF gun, CW Photoinjector for energy recovery linac, etc.
2. Energy Recovery Linac.
3. Femto-seconds electron beam bunch length measurement techniques: Coherent radiation based technique, RF kicker cavity, etc.
4. Laser based beam instrumentation: Optical Electrical effect based beam diagnostics. Laser wire, etc.
5. Exotic beam generation: Atto-second beam production, etc.
6. Plasma based electron and proton beam sources (joint session with plasma accelerator group?)
7. Bunch compression and CSR.
8. Nano-beam instrumentation: cavity BPM, Shintake monitor, etc.
9. Femto-seconds multi-laser or laser RF synchronization.
10. Remote accelerator operation, beam based control and feedback.
11. 6-D beam characterization.

The Proposed invited speakers are:

1. D. Edward of FNAL, Polarized and Flat Electron beam and its applications.
2. David Douglas of Jefferson Lab, Challenging Issues of ERL.
3. M. Ross of SLAC, Nano-Beam Instrumentation
4. M. Uesaka of Tokyo University, Femto-seconds bunchlength and Timing jitter measurement techniques.
5. W. Graves of BNL, Bunch Compressor and CSR.
6. R. Malone of BNL, Issues in Accelerator Remote Control.
7. Rainer Pitthan of SLAC, High-brightness Plasma Electron Sources.

I am hoping to have a joint session on Plasma proton, ion and electron sources with Tony Ting's group.