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Desired presentation format: Poster

Radiation Levels and Beamline Instrumentation for the NLC*. K. Jobe, C. Adolphsen, J. Frisch, M. Ross, Stanford Linear Accelerator Center (SLAC), Stanford, CA. The use of in-tunnel instrumentation, electronics, and signal processing equipment provides opportunities for significant cost reduction and performance increase for the Next Linear Collider (NLC). We will present the expected radiation environment and radiation levels, shielding and radiation control options, and the radiation tolerance of beamline detectors and electronics. The cost, reliability, and performance consequences of various options, such as intrinsic and engineered redundancy, component selection, remote electronics, and local shielding will be discussed.
* Work supported by Department of Energy contract DE-AC03-76SF00515.

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Classification and description of mechanical noise sources for the NLC* J. Frisch, K. Jobe, M. Ross, Stanford Linear Accelerator Center (SLAC), Stanford, CA. The beamline optics for the Next Linear Collider (NLC) supports must maintain component positions stable with motion of less than about 10 microns per hour. These tolerances are unprecedented in linear accelerator environments, and present significant engineering challenges for the accelerator designer. We will discuss various sources of mechanical noise, methods of noise coupling and isolation, and strategies to build and mount high power devices to meet accelerator positioning requirements. Since industrial low vibration systems typically depend on soft supports to support equipment with poor position tolerance, alternate strategies will be described which may meet the demands of high-power water cooled accelerator components. We will describe how, for a pulsed accelerator, beam steering feedback can loosen some tolerances for extremely low-frequency perturbations (thermal).
* Work supported by Department of Energy contract DE-AC03-76SF00515.