

FEEDBACK SYSTEMS FOR LINEAR COLLIDERS

L. Hendrickson, P. Grossberg, T. Himel, M. Minty, N. Phinney, P. Raimondi, T. Raubenheimer, H. Shoaee, P. Tenenbaum
SLAC, USA

Abstract

For the Next Linear Collider (NLC), extensive feedback systems are planned as an integral part of the design. Beam parameters such as trajectory, energy, and intensity will be controlled throughout the accelerator. Improved steering feedback algorithms are being prototyped. Specialized systems for the damping rings, RF and interaction point will operate at high bandwidth and fast response. To correct for the motion of individual bunches within a train, both feedforward and feedback systems are planned. Fully automated optimization feedbacks will be used for higher order tuning. The NLC feedback systems will build upon experiences at the SLC and other labs and will rely upon advancing technology in order to achieve the high performance required for successful collider operation.