Abstract #127
Parallel sessions: 5
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Measurements of the B^+ and B^0 Lifetimes from Inclusive and Semileptonic Decays at SLD

The SLD Collaboration

The lifetimes of B^+ and B^0 mesons have been measured using a sample of 200,000 hadronic Z^0 decays collected by the SLD experiment at the SLC between 1993 and 1996. Two analyses are presented. The first identifies the semileptonic decays of B mesons and reconstructs the B meson decay length and charge by vertexing the lepton with a partially reconstructed D meson. This method yields a ratio τ_{B^+}/τ_{B^0} with statistical uncertainty of ~ 0.12. The second analysis reconstructs the decay length and charge using an inclusive topological vertex reconstruction method. This results in a high statistics sample with statistical uncertainty on the τ_{B^+}/τ_{B^0} ratio of ~ 0.07. Statistical uncertainties dominate for both measurements.