Abstract #129
Parallel sessions: 9
Plenary sessions: 5,7

Time Dependent $B_s^0 - \overline{B_s^0}$ Mixing Using Inclusive and Semileptonic B Decays at SLD

The SLD Collaboration

We set a preliminary lower limit on the oscillation frequency of $B_s^0 - \overline{B_s^0}$ mixing using a sample of 200,000 hadronic Z^0 decays collected by the SLD experiment at the SLC. Three analyses are combined to set a limit. All determine the B hadron flavor at production by exploiting the large forward-backward asymmetry of polarized $Z^0 \to b\overline{b}$ decays in combination with a jet charge technique. Identified fragmentation kaons are used to enhance the B_s^0 fraction as well as the effectiveness of the initial state tag. In the first analysis, B decay vertices are reconstructed inclusively with a topological technique. Separation between B_s^0 and $\overline{B_s^0}$ decays is based on the reconstruction of a "charge dipole" of the topological vertices to exploit the $B_s^0 \to D_s^-$ cascade charge structure. The next two analyses select semileptonic decays to tag the B flavor at decay and reconstruct the B decay vertex by intersecting the lepton with either all tracks in the jet or the trajectory of a topologically reconstructed D vertex. The three analyses are combined to set a lower limit on the $B_s^0 - \overline{B_s^0}$ mixing oscillation frequency.