

Linear Collider Vertex Detectors from SLD to SiD Martin Breidenbach

The exquisitely small beam size of e^+e^- linear colliders, along with their low interaction rate and low radiation damage potential, opened qualitatively new regions in precision for collider vertex detectors. SLD pioneered systems with small pixel CCD's, ending with VXD3 that had 300 megapixels, each 20 microns on a side. VXD3's superior flavor tagging allowed SLD to compete with the LEP detectors in many measurements despite much less luminosity. Many of the same people are now considering a vertex detector for the ILC, where the substantial luminosity in a single train renders "conventional" CCD's unusable and makes the sensor technology choice an unsolved problem.