THE ICECUBE DETECTOR

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IceCube is a proposed detector for high energy neutrinos, to be located at the South Pole. The present design calls for the deployment of 4860 optical modules between depths of 1400 m and 2300 m, positioned on 81 strings of 60 modules each. The volume enclosed by IceCube will be 1 km3. The acquisition of data with a detector of this scale at a remote location poses a number of challenges for timing, calibration, performance and operation. The IceCube technology, in which waveforms from the photomultiplier tubes are digitized and time-stamped locally in
each optical module, offers a number of advantages in meeting these challenges. The performance characteristics anticipated for IceCube, and results obtained with a digital test string in the AMANDA array, will be presented.