Contribution ID: 41

Type: Oral

Irradiation of 0.13um ATLAS pixel test chip

Thursday, 28 September 2006 11:45 (25 minutes)

We present the results of irradiation tests of a 0.13um test chip containing ATLAS pixel analog front end circuits and various types of memory cells. The irradiations were carried out at the LBNL 88"cyclotron with 50 MeV/c protons and 16 MeV/c light ions for SEU studies. The front end circuits perform well up to the highest dose achieved at the moment, which is 1E15 p/cm². The linear energy transfer (LET) thresholds have been measured for SEU in five different latch structures. We plan to increase the radiation dose to 1E16 p/cm².

Summary

We present the results of irradiation tests of a 0.13um test chip containing ATLAS pixel analog front end circuits and various types of memory cells. The irradiations were carried out at the LBNL 88"cyclotron with 50 MeV/c protons and 16 MeV/c light ions for SEU studies. The front end circuits perform well up to the highest dose achieved at the moment, which is 1E15 p/cm². The linear energy transfer (LET) thresholds have been measured for SEU in five different latch structures. We plan to increase the radiation dose to 1E16 p/cm².

Primary authors: GARCIA-SCIVERES, Maurice (Lawrence Berkeley National Lab); ELY, Robert (Lawrence Berkeley National Lab)

Co-authors: HALLBERG, Daniel (Lawrence Berkeley National Lab); EINSWEILER, Kevin (Lawrence Berkeley National Lab); JI, Seung K. (UC Berkeley)

Presenters: GARCIA-SCIVERES, Maurice (Lawrence Berkeley National Lab); ELY, Robert (Lawrence Berkeley National Lab)

Session Classification: Parallel Session A7-ASIC developments