



SC00000232



SCP

CERN-DRDC
91-11

R&D Proposal
DEVELOPMENT OF HIGH RESOLUTION Si STRIP DETECTORS
FOR EXPERIMENTS AT HIGH LUMINOSITY AT THE LHC

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Abstract

Recent studies indicate that good tracking near the interaction region in LHC experiments will be crucial to fully exploit the physics potential of this machine up to the highest luminosities. It is believed that Si strip detectors are among the best candidates to survive in the experimental environment imposed by the high energy, high luminosity and the severe radiation levels expected. It is therefore proposed to perform a systematic study of the feasibility of using Si strip detectors and suitably designed front-end electronics for tracking in LHC experiments. Issues discussed here are possible physics applications, requirements and design characteristics for Si strip detectors and front-end electronics and cooling. An R&D programme for the coming two years is described.