

RD53 status and plans

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The RD53 collaboration is developing a large scale pixel front-end chip, which will be a tool to evaluate the performance of 65 nm CMOS technology in view of its application to the readout of the innermost detector layers of ATLAS and CMS at the HL-LHC. This paper will review recent results concerning radiation effects on devices and circuits in this technology, and will give a picture of the current understanding of damage mechanisms and of rad-hard design criteria. Experimental results of the characterization of two small scale readout chips will be discussed in the frame of the design work that is currently leading to the development of the large scale demonstrator chip RD53A to be submitted by the end of 2016.

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