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Measuring the Temperature Dependence of the Radiation Tolerance of Electronics JOHN CUMALAT, BEN BENTELE, Univ of Colorado - Boulder, DAVID CHRISTIAN, Fermi National Accelerator Laboratory, MICHAEL KROHN, STEVE WAGNER, Univ of Colorado - Boulder — The need for highly radiation tolerant electronics is critical in the era of running experiments at the CERN Large Hadron Collider. In a collaboration between the University of Colorado and the Fermilab ASIC group, we report the results of a 1 Grad irradiation of 65nm CMOS transistors performed in the Gamma Irradiation Facility (GIF) at Sandia National Laboratory. We describe the facility, the vortex tube cooling technique, and our experimental setup. Our measurements show significant radiation damage, but the damage is less severe as the temperature is reduced.

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