

# **Overview of the Influences of Total Ionizing Dose (TID) on Magnetic Tunnel Junctions for Radiation-Hard Memory**

Brandon Zink

*National Institute of Standards and Technology, Gaithersburg, MD*

Magnetic Random-Access Memory is a promising solution for onboard, radiation-tolerant memory due to the inherent resilience of the magnetic tunnel junction (MTJ) to the effects of ionizing radiation. Experimental studies have shown that an MTJ can retain its state after being exposed to total ionizing dose (TID) levels exceeding 10 Mrad. In this presentation, I will discuss the detrimental effects of ionizing radiation on SRAM and DRAM cells, some mitigation techniques, and the prospects of beyond-CMOS technologies for radiation-hard memory applications.