

Rad 101: Introduction to Radiation Effects on Electronics

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Bio:

Gary is an expert in space radiation effects and single-event testing and worked for almost two decades at NASA's Jet Propulsion Laboratory in the Radiation Effects and Testing Group before joining Xilinx in 2007. His main responsibility, (characterizing complex integrated circuits' suitability for use in the space radiation environment) remains unchanged - except for focusing even more on reconfigurable FPGAs. In addition, he is a key participant in Xilinx' upset-hardening R&D and is coordinating Xilinx' cross-functional efforts related to single-event effects on all products in the terrestrial radiation environment.

Tutorial Description:

"Have you ever wondered what the rad guys are talking about when they toss about acronyms like 'LET' and terms like 'cross section'? It's impossible to make appropriate engineering tradeoffs on spacecraft SWAP-C (size, weight, power, capabilities and cost) without understanding the fundamentals of space radiation effects on electronic components and systems. Aimed particularly at space-systems designers, this tutorial not only demystifies basic radiation effects on modern ICs and how they are measured, but also equips attendees with a level of understanding (and a few tools) to confidently predict how well different design choices will withstand the rigors of the space radiation environment. In short, why take this tutorial? Answer: to become a better designer."