

SERESSA 2022

SEE effects on VLSI devices: challenges and solutions

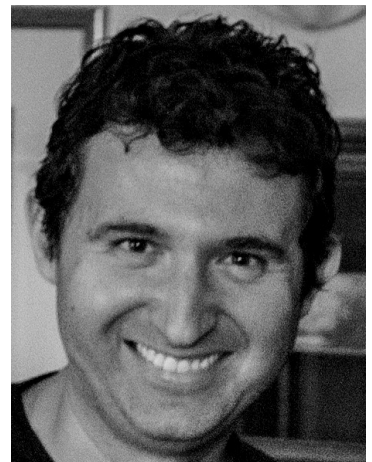
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Abstract:

Radiation effects on VLSI technology are provoked when radiation particles such as neutrons, protons or heavy ions hit a sensitive region of the integrated circuits. Due to the progressive technology scaling, VLSI devices are becoming, more and more vulnerable to Single Event Effects (SEEs) and are subject to cumulative ionizing damage known as Total Ionization Dose (TID). This talk will firstly describe the state-of-the-art methodologies used for analyzing the impact of radiation effects on modern FPGAs and ASICs by means of Computer Aided Design (CAD) tools and secondly, it will describe the state-of-the-art CAD design techniques for their mitigation.

Short Bio:

Luca Sterpone received the M.S. and Ph.D. degrees in computer engineering from the Politecnico di Torino, Italy, in 2003 and 2007, respectively, where he is currently Full Professor with the Department of Computer and Control Engineering where he is leading the Aerospace and Reconfigurable Computing group. He has authored more than 220 papers and he received several awards for his research activities. His current research interests include reconfigurable computing, computer-aided design algorithms, fault tolerance architectures, and radiation effects on components and systems



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