

18th International School on the Effects of Radiation on Embedded Systems for Space Applications (SERESSA)

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Radiation Hardening by Software: Advanced FDIR and Redundancy Concepts with COTS in Space

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Redundancy concepts in combination with advanced Fault Detection, Identification and Recovery (FDIR) software is a promising approach for improving reliability in spacecraft hardware. In the CubeSat mission UWE-3 this concept provided seamless operations for 6.5 years, despite only commercial of the shelf components were employed. UWE-3 on its polar LEO encountered significant SEU but due to internal redundancy switching from of the OBDH operations always continued without any interruption.

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