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Electronic reliability in the nuclear fusion radiation environment of tokamaks

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We give a brief overview of tokamaks, their electronics and their radiation environment. Then we present the main effects of these radiations on electronics, with emphasis on neutron-induced SEEs. We then explain how to ensure the reliability of electronics in the radiation environment of tokamaks. Finally, we present the studies carried out on this subject in the JET tokamak during the 2023 deuterium-tritium plasma pulse campaign during which a new world energy record for controlled fusion energy was established.

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