

# LXXII International conference "Nucleus-2022: Fundamental problems and applications"

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Type: **Plenary talk (30 min + 10 min questions)**

## NUCLEAR REACTIONS CONTRIBUTION IN SPACECRAFT ON-BOARD ELECTRONICS FAILURES

*Saturday, 16 July 2022 13:25 (35 minutes)*

In a wide range of characteristics of the corpuscular radiation of the near-Earth outer space, protons dominate (more than 90%), which have a high penetrating power and cause radiation damage and upset the onboard electronics (OBE) of the spacecraft. The nature of failures can be either degradation of the initial characteristics of OBE elements with increasing radiation dose, or a failure as a result of the generation of a sufficiently high number of electron-hole pairs during ionization of OBE atoms by passing primary radiation (protons), or products of nuclear reactions between primary radiation and OBE atomic nuclei. In the report we shall give a brief analysis of the probability of failures of electronics under the influence of primary radiation and fragments-products of nuclear reactions, which have a significantly higher ionizing capacity.

### The speaker is a student or young scientist

No

### Section

1. Applications of nuclear methods in science and technology

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