WHY NASA AND THE SPACE ELECTRONICS COMMUNITY CARES ABOUT CYCLOTRONS*

Kenneth A. LaBel†

NASA Electronic Parts and Packaging Program Manager, NASA Goddard Space Flight Center, Code 561.4, Greenbelt, MD, USA 20771

NASA and the space community are faced with the harsh reality of operating electronic systems in the space radiation environment. Systems need to work reliably (as expected for as long as expected) and be available during critical operations such as docking or firing a thruster. This talk will provide a snapshot of the import of ground-based research on the radiation performance of electronics. Discussion topics include:

- The space radiation environment hazard,
- Radiation effects on electronics,
- Simulation of effects with cyclotrons (and other sources),
- Risk prediction for space missions, and,
- Real-life examples of both ground-based testing and space-based anomalies and electronics performance.

The talk will conclude with a discussion of the current state of radiation facilities in North America for ground-based electronics testing.

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†E-mail: emken.label@nasa.gov