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Orbital Environment Risk Assessment for SumbandilaSAT

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Satellites have to operate in a hostile space environment that poses numerous threats from radiation, charged particles, residual atmosphere, micrometeoritic impacts, space debris and other operational and defunct satellites. The region of outer space around the Earth is becoming polluted from anthropogenic space system junk and fragments. Currently, according to US Space Surveillance Network, 21,000 objects (roughly 10cm or larger) orbiting Earth are tracked. With the knowledge of the state of the Sun's behavior, in terms of the 11-year solar cycle and sun-induced space weather phenomena, the passage through meteor showers and the population of known man-made space objects, it is possible to model the environmental impositions on Sumbandila during its operational lifetime. This paper aims to assess the risk posed by the natural space material and man-made space objects to SumbandilaSAT during its operational lifetime.

Level (Hons, MSc, PhD, other)?

MSc

Consider for a student award (Yes / No)?

Yes

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

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