

## Development of Space Environment Customized Risk Estimation for Satellite (SECURES)

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Variations of space environment in geospace driven by the solar activity is one of the factors that cause satellite anomaly. When a failure occurs in a satellite, it is important to understand the current condition of the space environment around the satellite in order to identify the cause and take proper action quickly.

However, risk of satellite anomaly due to space environment is not the same as each satellite, because the risk depends not only on the space environment but also on the design and materials of individual satellite.

Based on this idea, we have developed SECURES (Space Environment Customized Risk Estimation for Satellite) by combining space environment models and spacecraft charging models. In SECURES, we are focusing on the risk of spacecraft charging (surface/internal) for geosynchronous satellites. For estimating surface charging, we have combined the global MHD simulation model with the satellite surface charging models. And for internal charging, we have combined the radiation belt models with the satellite internal charging models. We have also developed the test product based on the SECURES. The current status and future directions of SECURES will be reported in this presentation.

Keywords: Tailor-made type space weather forecast, Spacecraft Charging, The Earth's magnetosphere