

Estimation of Japanese economic impact of extreme space weather due to failure in electricity transmission infrastructure

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Extreme space weather due to very powerful CMEs may potentially cause high geomagnetic induced currents (GIC) and then damage electricity transmission infrastructures. The cut off electric supply can cause regional blackout, which can lead severe damage on the regional economic activities. Oughton et al. (2017) quantified such impact on an extreme space weather event on US economy and indirect losses in the global economy, applying several patterns of blackout zone due to aurora.

Recently we have been developing an estimation model of economic impact in Japan due to extreme space weather GIC. We utilize Input-Output table of Japanese economy applying several patterns of blackout zone due to GIC similar to Oughton et al. (2017). We will report the current status of the model development and present initial results of a simplified version of the estimation model.

Keywords: Extreme space weather, GIC, economic impact