

Radiation Dose Estimation During the Ground Level Enhancement on 10-11 September 2017 using WASAVIES

*Tatsuhiko Sato¹, Ryuho Kataoka², Daiko Shiota³, Yuki Kubo³, Mamoru Ishii³, Hiroshi Yasuda⁴, Shoko Miyake⁵, Takashi Tsujino⁶

1. Japan Atomic Energy Agency, 2. NIPR, 3. NICT, 4. Hiroshima Univ., 5. National Institute of Technology, Ibaraki College, 6. Science Graphics Co. Ltd.

A ground level enhancement (GLE) event occurred on 10-11 September 2017, associated with X8.2 solar flare exploded at western limb. The magnitude of the GLE was not so large even at the peak, but the duration of the event was longer than average. We briefly report the results of our manually conducted nowcast using WASAVIES (Warning System of AViation Exposure to Solar energetic particles). The figure shows the calculated dose rate map due to solar energetic particles at the altitude of 12 km at 19:00 UT on Sep. 10. The maximum radiation dose rate at 12 km flight altitude was estimated to be approximately 2 $\mu\text{Sv/h}$, which is only one-third of the corresponding background dose rate due to the galactic cosmic-ray exposure. This result verified the safety of aircrews and passengers in aviation during this event. The automatic calculation system of WASAVIES was developed, and it will be released via website of Regional Warning Center Japan, International Space Environment Services (RWC Japan, ISES) at NICT in near future.

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