Current Status of WASAVIES: Warning System for Aviation Exposure to Solar Energetic Particles

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A physics-based warning system of aviation exposure to solar energetic particles, WASAVIES, is improved to be capable of real-time and automatic analysis. In the improved system, the count rates of several neutron monitors (NM) at the ground level, as well as the proton fluxes measured by the GOES satellite are continuously downloaded at intervals of 5 min and used for checking the occurrence of ground level enhancement (GLE). When a GLE event is detected, the system automatically determines the model parameters for characterizing the profiles of each GLE event, and nowcasts and forecasts the radiation dose rates all over the world up to 24 h after the flare onset. A web-interface of WASAVIES (see picture below) was also developed, which broadcasts radiation dose rates due to cosmic-ray exposure for all over the world as well as on 9 selected flight routes at intervals of 5 min and 1 day during GLE and the other periods, respectively. It is planned to be in operation from March 2019 through the public server of NICT.

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