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# Atmospheric Response to Fukushima Daiichi NPP (Japan) Accident Revealed by Satellite and Ground observations

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Immediately after the March 11, 2011 earthquake and tsunami in Japan we started to continuously survey the Outgoing Long-wavelength Radiation (OLR, 10-13 microns) from NOAA/AVHRR. Our preliminary results show the presence of hot spots on the top of the atmosphere over the Fukushima Daiichi Nuclear Power Plant (FDNPP) and due to their persistence over the same region they are most likely not of meteorological origin. On March 14 and 21 we detected a significant increase in radiation (14 W/m<sup>2</sup>) at the top of the atmosphere which also coincides with a reported radioactivity gas leaks from the FDNPP. After March 21 the intensity of OLR started to decline, which has been confirmed by ground radiometer network. We hypothesize that this increase in OLR was a result of the radioactive leaks released in atmosphere from the FDNPP. This energy triggers ionization of the air near the ground and lead to release of latent heat energy due to change of air humidity and temperature. Our early results demonstrate the potential of the latest development in atmospheric sciences and space-borne observations for monitoring nuclear accidents.

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