Charge change estimation at short-burst energetic radiation during the Blizzard

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We investigate the atmospheric electric field (AEF) variation caused by the blizzard at Syowa station, Antarctica, using the field mill, laser precipitation monitor (LPM). Two field mill sensor was installed at the 10 and 1 meter height. During the blizzard (wind speed more than 6 m/s), the AEF mostly showed the intense positive (fair-weather-directoin) values, which originates from the negatively charged snow gradient. However, during some periods, the AEF showed negative values. Comparing two different height AEF with LPM, the sudden LPM showed seldom particles after the blizzard, so that the AEF showed negative. Our interpretation was that the termination of the blizzard disturbed the gradient, i.e. negative AEF occurrence.

Keywords: Atmospheric electric field, Blizzard, Snow particle