Changes of atmospheric electricity during dust nepheline storms in Apatity

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The dust storms, generated by wind from nepheline spoil piles within about 10 km from Apatity city, entail strong decrease of atmospheric electric field up to -600 V/m and of electric current up to 3 pA/m2. The negative sign of the field and current during the nepheline storm is observed always. The effect is explained by presence of negative charge on nepheline corpuscles. Non-conductive part of the total current and the air conductivity are calculated, and it is found that during the storm the conductivity is decreased a third, and the non-conductive current becomes negligible.