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Radiological and geophysical changes around the Fukushima Daiichi Nuclear Power Plant since the accident to the present time

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Detailed analysis of accidental released of radioactive material from Fukushima Daiichi nuclear power plant has shown that long-lived radionuclides add considerable support for intensity of ion formation. Based on the results of airborne monitoring by MEXT and DOE (total surface deposition of Cs^{134} and Cs^{137} inside 80 km zone of Fukushima Daiichi NPP) it has been calculated the spatial distribution of the intensity of ion formation and atmospheric electric conductivity. The evidence of plutonium in the Fukushima radioactive trace allows calculates the concentration of small, intermediate and large ions. The results show the excess of these parameters by several orders of magnitude since the accident to the present time. For example the concentration of small air ion in the area of Chernobyl is $7\pm2\cdot10^2$ cm^{-3}, the Fukushima Daiichi NPP ones is $1.3\cdot10^6$ cm^{-3}. The difference in the atmospheric bipolar electric conductivity is about 24 fS/m between the Chernobyl and the Fukushima Daiichi ones. The evaluation technique was used after Chernobyl disaster allows to make an analysis of ecological, hygiene requirements and other problems into the troposphere and on the soil intensity of ion formation in the area of Fukushima Daiichi nuclear power plant. The standard ion air differ by four orders of magnitude in the case for Fukushima Daiichi ones. Comparative study of the radiophysical characteristics of the atmosphere with the analogous ones in Chernobyl and application of identification of various types of the air pollution is discussed.