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## Intercomparison of atmospheric transport models using 1 km grid meteorological data for the Fukushima Daiichi Nuclear Power Plant Accident

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Following the previous atmospheric transport model intercomparison project (MIP2: Sato et al, 2018), a new project of model intercomparison (MIP3) has been conducted in which, out of 12 models in MIP2, 9 models are participating. The main aim of MIP3 is to examine the effects of using a refined meteorological data with a finer horizontal resolution of 1 km (Sekiyama et al., 2019). This paper describes outline of the preliminary results of MIP3.

The horizontal distribution Cs-137 deposition in the eastern part of Honshu Island (the main island of Japan) calculated by the models were compared with the aerial survey results to find that the simple ensemble average of the 9 models was a little worse than that of the 12-model ensemble in MIP2 in terms of the statistical index RANK, which is the combination of the correlation coefficient, the fractional bias, the figure of merit in space and KPS. This slightly poorer performance is tentatively considered to be caused partially by the absence of three models which showed rather broad deposition patterns and by the underestimation in the Nakadori area (the middle part of Fukushima Pref.). However, in the sector in the northwestern direction from the accidental site which had the largest deposition, the deposition pattern simulated by the MIP3 ensemble, if compared with that of MIP2, is more consistent with the survey result. As for the atmospheric concentrations, although the model performance for the plumes that traveled over wider areas was found to be slightly poorer for MIP3 than MIP2, it was found that the MIP3 ensemble generally showed better performance for the plumes that affected the near area in the Hamadori area (the coastal part of Fukushima Pref.). The better performance of the MIP3 in this

area can be attributed to the better representation of topography in the meteorological simulation.