

## Mission, potential, and prospects of d4PDF

\*高薮 出<sup>1</sup>

\*Izuru Takayabu<sup>1</sup>

1. 気象庁気象研究所

1. Meteorological Research Institute

When stakeholders make decision how to adapt to the disaster caused by climate change, PDF information of extreme events is needed. The mission of d4PDF is to get such PDF. For this purpose, at least order hundred ensemble experiments have been done. Driving hundred ensembles by using Earth Simulator, we could set the resolution of the model moderately, not so coarse. In this case, we drive AGCM with equivalent grid size of 60km (MRI-AGCM3.2H), and downscale the calculation results by using 20km grid regional climate model (NHRCM20) around the Japanese Archipelago. Here the ensemble number has been increased by adopting many kinds of SST as the lower boundary condition. The perturbation is partly caused by uncertainty comes from the accuracy of observation data. It is clearly shown that hundred ensembles have potential to produce PDF of extreme events. However, the size of the dataset is over 2PB, which makes it difficult to be used in many kinds of adaptation issues.

All the calculation in d4PDF has been done by using the Earth Simulator, under the “strategic project with special support” of the center for earth information science and technology (CEIST) / JAMSTEC. Also, data integration and analysis system (DIAS) helped us archiving the calculated data. Fundamental support has been done with program for risk information on climate change (SOUSEI), sponsored by ministry of education, culture, sports, science and technology –Japan (MEXT).

キーワード：地球シミュレーター、アンサンブル、極端事象、ダウンスケール、気候変動

Keywords: earth simulator, ensembles, extreme event, downscale, climate change