

Mission, potential, and prospects of d4PDF

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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.

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