



## **Evaluation of Prospective Changes in Temperature Extremes for the CORDEX-Australasia Domain Using the NEX-GDDP Dataset**

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CORDEX-Australasia is a vast domain where comprises primarily Australia, New Zealand, and Papua New Guinea whilst it also covers the islands in the Pacific Ocean such as New Caledonia, Fiji, Tonga, Tuvalu, and Vanuatu as well. Climate of Australasia varies from tropical monsoonal and arid to moist temperate and alpine. The number of studies about the domain of Australasia is very limited and it is in urgent need of further efforts. This research points out the relationship between the climate change and temperature extremes over the domain of Australasia and it investigates the changes in the number of some specific temperature extreme indices (i.e. summer days, consecutive summer days, heat wave duration, very warm days, tropical nights, etc.) as described by the joint CCI/CLIVAR/JCOMM Expert Team (ET) on Climate Change Detection and Indices (ETCCDI). All these extreme indices were also calculated using the NASA Earth Exchange Global Daily Downscaled Projection (NEX-GDDP) dataset. In this study, all these index computations have been employed by utilizing ACCESS1-0 and MPI-ESM-MR global circulation models' bias corrected daily minimum and maximum air temperature variables, which were statistically downscaled to a 0.25 degrees x 0.25 degrees spatial resolution by the Climate Analytics Group and NASA Ames Research Center, under both medium-low and high emission trajectories (i.e. RCP4.5 and RCP8.5). Moreover, the analysis of the projected changes in the temperature extremes was applied for the period of 2081-2100 with respect to the reference period of 1986-2005.

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