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CORDEX projections of changing tropical cyclones in the IPCC SR1.5 report as performed on the CHPC's Lengau cluster

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The Paris Agreement which was achieved in December 2015; holds signatory countries responsible for keeping the increase in global average temperatures well below 2°C with respect to the to the pre-industrial period and to strive to limit the temperature increase to 1.5°C , recognising that this will reduce the impacts of climate change. Given this impetus at global level, it is of paramount importance to consider the implications of the 1.5 , 2, and 3 °C thresholds in the tropical cyclone activities within the South West Indian Ocean Basin.Using the Coordinated Regional Downscaling Experiment-Africa (CORDEX) regional climate models, we downscale six global climate models of the Coupled Model Inter-comparison Project Phase 5 (CMIP5) to high resolution with the aid of computing power from the south African (CHPC) Centre for High Performance Computing's Lengau Cluster.This serves towards studying changes in tropical cyclone tracks over the South West Indian Ocean under different extents of global warming(1.5, 2 and 3° C of warming with respect to pre-industrial conditions). It is projected that the number of tropical cyclones making landfalls over southern Africa under global warming will decrease, with 2 °C being a critical threshold, after which the rate of cyclone frequency with further temperature increases no longer has a diminishing effect.

Presenter Biography

Primary author: Mr MUTHIGE, Mavhungu

Presenters: Prof. ENGELBRECHT, F.A.; Mr MUTHIGE, Mavhungu

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