NITheCS
National Institute for
Theoretical and Computational Sciences

NITheCS Colloquium
Monday, 29 November 2021, 16h00 – 17h00

Dr Mary-Jane Bopape (South African Weather Service)

"Forecasting at the South African Weather Service"

ABSTRACT

Forecasting weather with a lead time of beyond two hours requires the use of numerical weather and climate models. These models are based on conservation of momentum, energy and mass, as well as the equation of state. The models are generally split into grid boxes, with calculations made at the edges of the grid boxes, where lines of latitude and longitude meet. The smaller the grid box, the higher the resolution. High Performance Computing (HPC) makes it possible for numerical weather and climate models to run with high resolution using domain decomposition to split the work up to run on different nodes. Output from weather and climate models is used to develop products for climate sensitive sectors such as agriculture, water, energy, health, marine and energy. The presentation will focus on work conducted by the South African Weather Service (SAWS) researchers, and how the inhouse HPC system and the Centre For High Performance Computing (CHPC) cluster are used for research and operations in Numerical Weather Prediction.

BIOGRAPHY

Dr Mary-Jane Bopape's research interests lie in the numerical modelling of the atmosphere at different spatial and temporal scales, the improvement of sub-grid models and high performance computing.

Dr Mary-Jane Bopape is the senior manager of research at the South African Weather Service. Her research work focuses on the development of homegrown weather and climate models and she is leading activities on a weather and climate project to implement the SADC Cyber Infra-structure Framework.

Dr Bopape graduated from the University of Pretoria in 2013 with her thesis titled, '*Simulations of moist convection using the quasi-elastic equations*'. She was supervised by Professors Francois Engelbrecht, David Randall and Willem Landman.

CLICK TO REGISTER

Or register at: https://bit.ly/3cO9hHd