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Type: Oral Presentation

## Assessment of the Cosmic-ray Soil Moisture Observing System for different agroclimatic zones.

*Tuesday, 5 July 2022 12:00 (15 minutes)*

Soil moisture is a critical parameter in the forecasting and assessment of weather-induced extreme events such as heatwaves, droughts and floods, which are likely to increase in both frequency and intensity as a consequence of the projected climate change in southern Africa. Understanding the potential impacts of climate variability/change on soil moisture is essential for the development of informed adaptation strategies. However, long-term in-situ soil moisture measurements are sparse in most countries. The novel cosmic-ray method for measuring area-average soil moisture at the hectometer horizontal scale is assessed in this study. The stationary cosmic-ray soil moisture probe measures the neutrons that are generated by cosmic rays within air and soil and other materials, moderated by mainly hydrogen atoms located primarily in soil water, and emitted to the atmosphere where they mix instantaneously at a scale of hundreds of meters and whose density is inversely correlated with soil moisture. long-term soil moisture data set is critical for sustainable agricultural productivity, and efficient management and sustainable use of natural resources within the context of climate change adaptation

### Apply to be considered for a student ; award (Yes / No)?

No

### Level for award;(Hons, MSc, PhD, N/A)?

N/A

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