

East Africa Monsoon Monitoring Network (EAMON): measurement of water and energy balance components for satellite calibration/validation and modelling

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Abstract

Accurate and reliable estimation of water cycle variables using remote sensing is important for addressing many scientific research questions and finding solutions to modern day societal problems. However, there are currently challenges with accessing suitable field sites and comprehensive data/measurements for calibration/validation, satellite product improvement and modelling especially in semi-arid and data scarce areas of Africa. To this end, the Faculty of Geo-Information Science and Earth Observation (ITC) is establishing the East Africa Monsoon Monitoring Network (EAMON) in Kenya, East Africa to measure important water and energy cycle components in support of satellite retrievals, satellite product improvement and modelling. The aim of this poster is thus to introduce the ITC-EAMON vision, network and geographic locations. Some of the analysed initial data are presented. Eddy covariance and Bowen ratio energy balance assessments for Naivasha and Masai-Mara are also presented. Furthermore, profile measurements of soil moisture and soil temperature (-5cm,-10cm,-20cm,-40cm and -80cm), cosmic ray soil moisture, rainfall intensities from commercial telecommunication microwave link network, and disdrometer measurements from Naivasha and Masai-Mara stations are analysed and presented. The potential use of the network for satellite remote sensing retrievals, satellite product improvement and understanding the East African monsoon processes is also demonstrated.

Key words: ITC-EAMON, remote sensing, water cycle components, satellite retrievals, calibration/validation, energy balance