Polarimetric analysis over African savanna woodland using ALOS/PALSAR

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Abstract

This paper presents polarimetric analysis over African Savanna woodland using ALOS/PALSAR to investigate the trend between backscatter and biomass levels. An extensive field inventory was carried out combining Differential GPS and conventional topographic mapping techniques. Geographic position, basal diameter and height of trees in sampled plots were measured. Plot level biomass quantities were obtained using established allometry for the region. Geocoded ALOS/PALSAR level 1.1 and 1.5 data is checked for accuracy against existing geospatial data for the case study area. Sigma nought, Freeman and Pauli component are extracted for the sampled plots to investigate the relationship between biomass, volume and double bounce scattering. Finally a comparison of sigma nought, Freeman and Pauli components is carried out to analyze trend against volume and double bounce scattering.