

Above ground biomass mapping of mangrove forest in Vietnam by ALOS PALSAR polarimetric measurements

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Abstract

This research is investigating the above ground biomass mapping of mangrove forest in Vietnam by ALOS PALSAR measurements. Our test sites are located at four districts of Quang Ninh province in the Northeast of Vietnam and Cam Mau province in the South of Vietnam. Firstly, a field measurement were carried out in to measure water level, tree species, height, diameter at breast height (DBH) and crown diameter. Secondly, field based biomass measurement was carried out in Quang Ninh province by FREC group and in Cam Mau province by GIRS group. It was found that the water level has a few meters diurnal changes, the area covered by mainly four species of mangrove forests with homogeneous spatial distribution, height ranges from 0.6m to 15.0m, DBH from 5cm to 30cm and crown diameter from 0.7 to 1.6m. Allometric relationship between DBH and above ground biomass was retrieved via literature survey (Komiya *et al.*, 2008) and those equations are interpolated supplemented via field survey results. Then ALOS PALSAR HH and HV polarimetric backscatter coefficients are investigated and an above ground biomass of those area are estimated based on an allometric equation.

Keywords: HH and HV polarimetric backscatters, DBH and above ground biomass