

Impact of tidal height on characteristics of ALOS PALSAR measurements to estimate above ground biomass of mangrove forest in Indonesia

S Darmawan^{1,3,4}, W Takeuchi¹, Y Vetrira², K Wikantika³ and D K Sari⁴

¹. Institute of Industrial Science, University of Tokyo, Japan

². Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

³. Center for Remote Sensing, Institut Teknologi Bandung (ITB), Indonesia

⁴. Institut Teknologi Nasional (ITENAS), West Java, Indonesia

Email: soni@iis.u-tokyo.ac.jp and soni_darmawan@yahoo.com

Mangrove is used to define both the plants that occur in tidal forests, and to describe the community itself. Mangrove has the most carbon rich forests in the tropics. Mapping and monitoring biomass of mangrove forest is very important to manage ecosystem of mangrove but field survey of mangrove biomass and productivity is very difficult due to muddy soil condition, heavy weight of the wood, very large area and tidal effect on mangrove area. Advanced Land Observing Satellite (ALOS) Phased Array L-band Synthetic Aperture Radar (PALSAR) available for identification and monitoring mangrove forest. The objective of this research to investigate impact of tidal height on characteristics of HH and HV derived from ALOS PALSAR for estimation aboveground biomass of mangrove forest. Study area on this research at Segaraanakan, Cilacap, Central Java, Indonesia. Methodology consists of collecting of tidal height data on study area, collecting of ALOS-PALSAR time series data, preprocessing, ground survey, collecting of region of interest (ROI) on mangrove forest, plotting ROI on ALOS PALSAR time series data to get statistics of HH and HV, characterization of HH and HV and impact analysis of tidal height on HH and HV. The expectation result of this research to show impact of tidal height on characteristics HH and HV on mangrove forest types derived from ALOS-PALSAR and to improve a model for estimation aboveground biomass of mangrove forest.

Key words: Tidal height, HH, HV and biomass