Estimation of Carbon Stock in Even-aged Sugi Forests Using Satellite Image Data

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A Japanese cedar occupies 40% of an artificial plantation of Japan, and are most artificial plantation resources. The amount of biomass of sugi plantation was presumed using satellite data. The biomass can be easily presumed from volume. Therefore, volume presumption is important. From a result of analyzing the relationship between volume and digital number of the band according to wavelength in the amount of biomasses of LandsatTM Images, the band five showed the highest correlation between volume and digital number. And, high resolution satellite image data (Quick Bird and IKONOS) were visually excellent and its position of an investigation plot is also clear. Then, the relationship between a plot volume and the digital number classified by band was analyzed. Regression was obtained between digital number of band3 and volume of Quick Bird and IKONOS . Every subcompartment volume was presumed by these regressions and the map of biomass estimated from volume were showed. On the other hand, in forest register of Japan, volume for every subcompartment has added up only one value. We analyzed volume from plot, volume from forest register and volume from satellite data and investigated whether estimated volume accuracy of which was the highest. Consequently, the estimated volume from satellite data was the best.