

PD-21 Estimating structural parameters of a complex mixed
conifer-broadleaf forest using UAV photogrammetry

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Estimating forest structural parameters in structurally complex forests remains as challenging. Use of high resolution imagery, suitable remote sensing variables and models will highly contribute to improve estimation accuracy. We used high-resolution UAV RGB imagery to estimate forest structural parameters in a mixed coniferbroadleaf forest at the UniversityofTokyo Hokkaido Forest. In addition to DBH, spatial position and height of dominant trees were measured in the inventory plots. Pix4D software was used to derive dense point clouds, digital surface model, canopy height model (CHM) and orthomosaics. Mean, maximum, percentile and standard deviation of CHM were validated with the height and DBH, basal area (BA), stem volume (V) and tree carbon stock (CST). 75th percentile heights of CHM were highly correlated with dominant tree height, while CHM mean was highly correlated with BA, V, and CST. Conifer dominated plots had a higher estimation accuracy with dominant tree height.