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Plantation Forests Height Mapping Using Unmanned Aerial System

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Abstract : Plantation forests are useful for timber production, recreation, environmental protection and social development. Stands height is an important parameter for the estimation of forest volume and carbon stocks. Although lidar is suitable technology for the vertical parameters extraction of forests, but high costs make it not suitable for operational inventory. With the development of computer vision and photogrammetry, aerial photos from unmanned aerial system can be used as an alternative solution for height mapping. Structure-from-motion (SfM) photogrammetry technique can be used to extract DSM and DEM information. Canopy height model (CHM) can be achieved by subtraction DEM from DSM. Our result shows that overlapping aerial photos is a potential solution for plantation forests height mapping.

Keywords : forest height mapping, plantation forests, structure-from-motion photogrammetry, UAS
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