STUDY ON SEDIMENTATION OF RIVER USING CLOSE RANGE PHOTOGRAMMETRY TECHNIQUE

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ABSTRACT

Sediment is a natural material that is broken down by erosion and weathering processes and its in the form small particles. It is transported by transport agents such as water, wind, ice or gravity forces acting on the particles of material itself. However, sediment is most often transported by the water, wind and glacier. Sand beach and river deposits are examples of sedimentation. Therefore, sedimentation is a problem that often hit the countries experiencing rapid development including Malaysia. This research is conducted to help the authorities to solve the sedimentation problem. The main goal of this research is to investigate the effectiveness of photogrammetry technique to solve sedimentation problem on the simulation river meandering model. The river meandering model used in this study as a preparation before goes to real site. Previously, not many studies have been done on sedimentation with using close range photogrammetry (CRP) technique. In this research, aerial photographs of the study area were captured by using a compact camera installed on the Unmanned Aerial Vehicle (UAV). The aerial photographs were captured at the two different epochs. The aerial photographs were processed its final outputs are Digital Terrain Model (DTM) and orthophoto. Sedimentation rate can be known by subtracting the volume of the DTM at the first epoch and the volume of the DTM at the second epoch. As a conclusion, study on sedimentation using close range photogrammetry techniques is important and essential because this technique is still new and not much explored especially in developing counties. In addition, it offers a cost-efficient, high ground resolution and rapid data acquisition with high accuracy.

Keywords: Sedimentation; Close range photogrammetry; Unmanned Aerial Vehicle