ABSTRACT

Measuring water level is an important component in various applications, especially in hydrological applications. There are various methods of measuring surface water levels, from contact methods to non-contact methods, each has various techniques depending on the measuring instrument used. Among the available techniques, the use of the Near-IR LiDAR for distance measurement has potential uses because it can be used without direct contact with water. In this study, Near-IR LiDAR (850nm) was tested to determine its suitability as a water level sensor. Measurements were tested for variations in water patterns and turbidity. Although water has a low reflectivity for infrared radiation, it was found that in this study there was still the possibility to be able to detect surface water under certain conditions. In the dynamic water test, the measurement error is <10%. In the turbidity test, minimal information on turbidity that can be used by Near-IR LiDAR to detect the water level is 700 NTU with a measurement error of 5.2%.

Keywords: LiDAR, Water Level, Distance