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Discipline Glaciology / Geophysics  
Title Boundary Conditions for the David Glacier Active Lakes  
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Keywords remote sensing, glaciology

In the 2016-2017 Austral Summer, the Korean Polar Research Institute and UTIG collaborated to perform an aerogeophysical survey of the lower portion of the David Glacier Catchment where active subglacial lakes have been identified based on patterns of surface elevation change observed using repeat-track satellite altimetry. The primary goal of our survey was to characterize the subglacial hydrology generating active lakes in this region, including better constraining lake outlines, and to perform initial site characterization for a planned drilling project. Flight lines were chosen to continue the ICESat surface elevation record and to re-fly three previously-surveyed transects. In this work, we extend the elevation change record using laser altimetry, allowing us to determine the lake stage at the time of observations. We then use radar-derived basal reflection coefficients and specularity, along with probabilistic water routing, to identify likely locations for water collection and suggest regions for more focused geophysical investigation.