

A linked system of lakes on MacAyeal Ice Stream

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Repeat track ICESat data acquired between October 2003 and April 2007 have revealed three large active subglacial lakes under MacAyeal Ice Stream, one of which is just 30km from the grounding line with the Ross Ice Shelf. This system represents an important pathway for subglacial water to the Southern Ocean. We discuss the hydrologic properties of this system and show linkages between the three lakes. We also analyse a 12-year time series of satellite radar altimetry and show that the results can be ambiguous over 10-20km scale lakes located in deep surface troughs. Instead, image differencing of the region will be used to extend the time series of lake filling and draining backwards to times earlier than 2003.