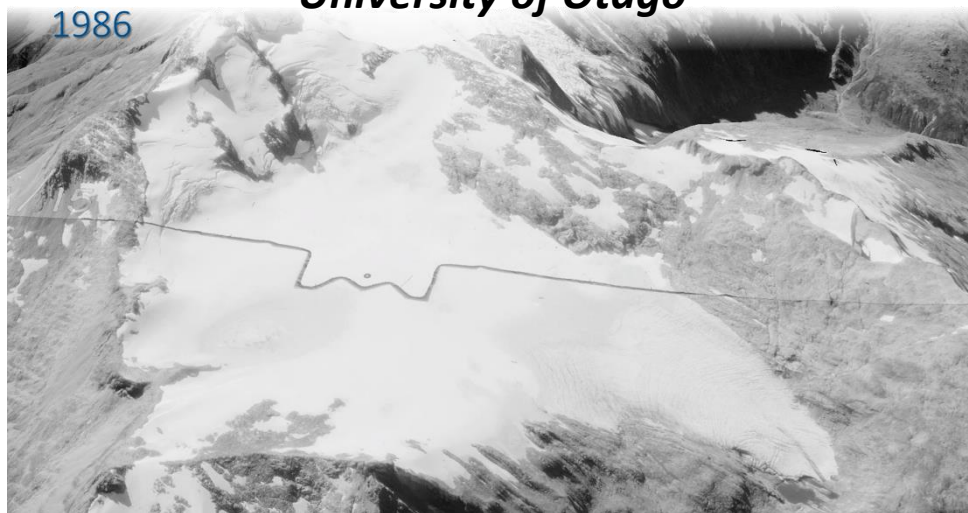


Going, going, gone!

How photogrammetry 2.1 reveals cold facts that change NZ glaciers' story

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Abstract:

Brewster Glacier has been a centre of attention for New Zealand glaciology. However, 16 years of in-situ glaciological measurements, 20 years of near-daily satellite observations, and 43 years of photos captured at the end of summer have not yet fully answered the question: How much ice has Brewster Glacier lost since the 1980s? Without direct observations of elevation changes for the whole glacier surface, our current knowledge of the mass balance signal is similar to dead reckoning with no initial coordinates or bearing. Only the geodetic mass balance from cumulated surface elevation changes across the whole glacier can provide a definite answer, in turn allowing the yearly mass balance signal to be debiased and related to external causes. This research stretches the latest developments in photogrammetry to address the complexity of revisiting 3D topographic mapping from scanned historical analogue imagery in challenging contrast and terrain. Successful surface modelling with unprecedented resolution and accuracy for the entire glacier provides a radically new picture of the rate and distribution of glacier demise. Ultimately this research questions what we truly know about the state and fate of New Zealand glaciers and offers alternative means for systematic monitoring.

School of
Surveying
Te Kura Kairāri

12:00 noon, Thursday, 1 August 2019

**L1 Lecture Theatre
School of Surveying
310 Castle Street**

