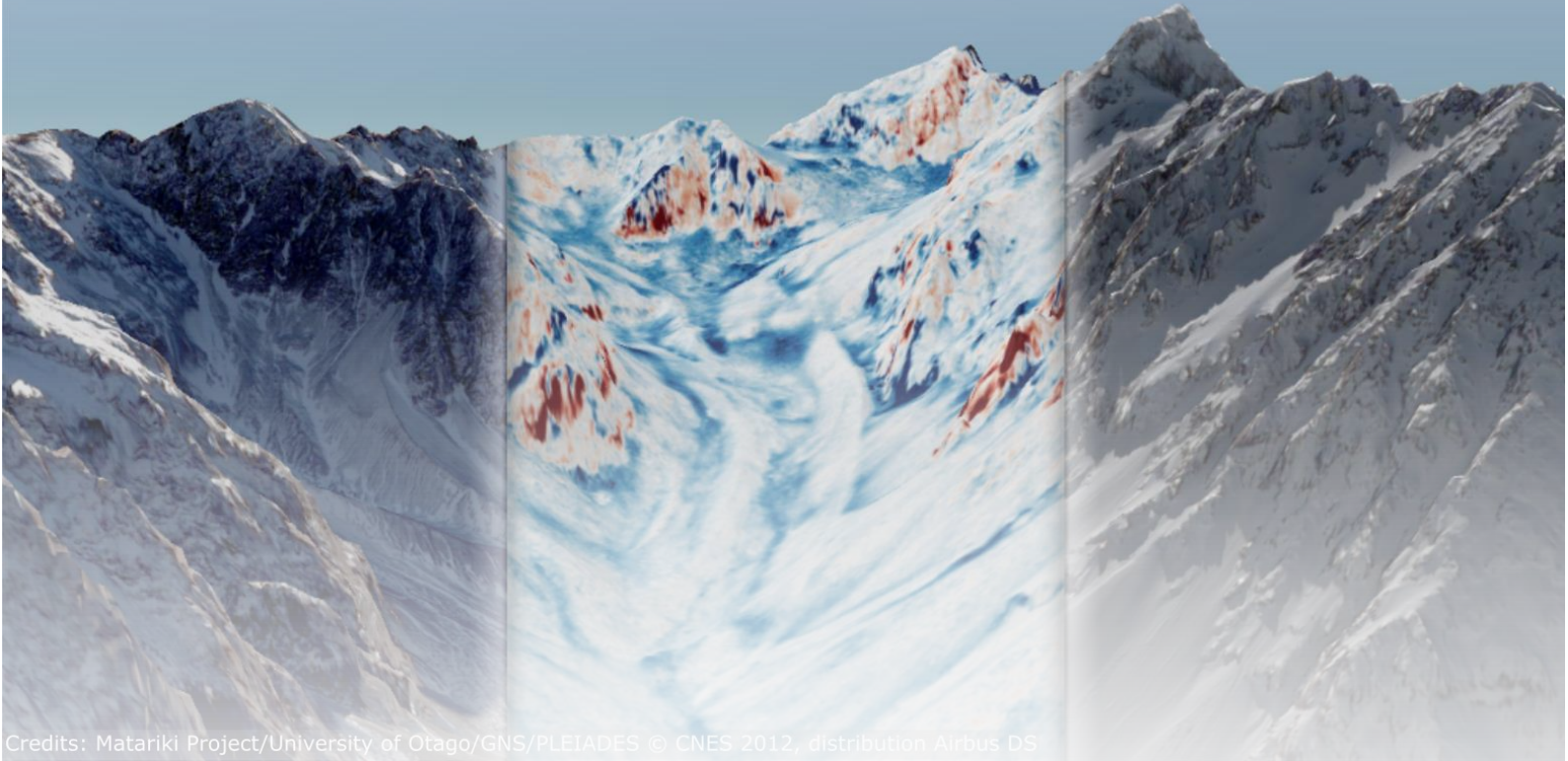


# Te Kura Kairūri School of Surveying Lunchtime Seminar Series

## From snow cover to snow depth, and beyond, from space

Dr Todd Redpath Te Ihowhenua | School of Geography & Te Kura Kairūri | School of Surveying, University of Otago



A historic and ongoing lack of in situ observations underpins a reliance on remote sensing and modelling for understanding seasonal snow processes in Aotearoa New Zealand (ANZ). Daily satellite observations of snow covered area (SCA) have been acquired by the MODIS sensor since the year 2000. While SCA observations are informative, retrievals of snow depth are desirable for better resolving snow processes and supporting modelling efforts. Measuring snow depth from space is now viable thanks to recent advances in both satellite sensor technologies and photogrammetric processing. A 22-year record of SCA for the South Island reveals the emergence of negative trends from a background of considerable spatio-temporal variability. Mapping of snow depth demonstrates the performance of satellite photogrammetry applied to a challenging target in complex terrain, and represents a step change in our ability to quantify and characterise seasonal snow in support of ongoing hydrological modelling efforts.

*Image credits: Matariki Project/University of Otago/GNS/  
PLEIADES (C) CNES 2012, distribution Airbus DS*



**Thursday 8<sup>th</sup> September 2022 (12pm – 1pm)**

L1 Lecture Theatre | School of Surveying, 310 Castle Street  
OR Join remotely: <https://zoom.us/join> (ID: 329 427 2033, P/W: 310310)