

Fast treatment for glacier modelling

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(PhysOrg.com) -- Research that will improve understanding of how climate change will impact on New Zealand's glaciers and enable more accurate planning for water resource and tourism management in the South Island is being turbocharged.

A project based at the Antarctic Research Centre at Victoria and led by post-doctoral fellow Nick Golledge has won one million hours of super fast computing time, the major prize in the University of Canterbury BlueFern High Performance Computing Grand Challenge. The competition was established to help researchers tackle some of the largest scientific problems.

Dr Golledge is using glacier-climate modelling to understand how glaciers in the Southern Alps developed, how they have evolved, and what is likely to happen to them over the next century.

"Understanding how much mass a big glacier like the Tasman will lose over the next 100 years has significant implications for water resource management. [Glaciers](#) like Franz Josef also attract tourists and are fundamental to the local economy so if they retreat over the next century there could be major socio-economic impacts."

Dr Golledge, who connects remotely to the BlueFern from his office at Victoria, says winning the Grand Challenge will give him priority access to supercomputing capability, allowing him to undertake more ambitious modelling and complete it faster.

"We will be able to generate much higher resolution simulations and consider longer scenarios and that means we can produce higher impact science."

Dr Golledge will be using a 3D ice sheet model originally developed at the University of Fairbanks, Alaska, to analyse glacier growth and decay over the past 100,000 years. He will then apply the resulting data to simulate scenarios for the future.

Provided by Victoria University

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