

PhD project available: “**Impacts of Australian bushfires on New Zealand glacial environments**”

**Background:** The Australian bushfires that occurred in the austral summer of 2019/2020 deposited very large quantities of dust and aerosols on the snowfields and glaciers of New Zealand. This deposition resulted in reduced albedo of our glacial systems and assuredly increased melting rates. Our team seeks to understand the effect of the bushfire deposition on albedo, the abundance and provenance of the particles, their effect on other albedo-reducing impurities such as snow algae, and the effect of the phenomenon on surface energy balance of snow and the net effect on melting of a whole glacier system.

**Funding:** The PhD is funded by the New Zealand Marsden Fund (<https://www.royalsociety.org.nz/what-we-do/funds-and-opportunities/marsden/awardedgrants/marsden-fund-highlights/2020-marsden-fund-highlights/impacts-of-australian-bushfires-onnew-zealand-glacial-environments/>).

Deadline for applications: 1. September, 2021

**PhD project:** The effect of Australian bushfire aerosols on albedo and melting rates in New Zealand glacial systems. The aim of this project is to quantify the effect of light-absorbing impurities (LAI) from Australian bushfire aerosols and microbial communities on the energy balance of New Zealand glacial systems. Impurities can significantly reduce the albedo (reflectivity) of glaciers and snow-covered areas, and can therefore increase the amount of absorbed energy and melt. In this part of the project, we will quantify the changes in albedo that are caused by the different LAIs, using a combination of controlled field experiments and modeling. The modeling will include both, process modeling of LAI effects on albedo, as well as modeling of NZ glacial systems and their sensitivity to changes in impurities in the future.

**Requirements:**

- All Victoria University of Wellington doctoral entry requirements must be met. Please see <https://www.wgtn.ac.nz/fgr/prospective-phds/qualifications-required> for details.
- Background in physical sciences, such as Atmospheric Science, Earth Science or Physics is preferred. We will, however, consider a wider range of backgrounds, if they are relevant to the project.
- Numerical skills and some knowledge in computer programming are preferable.
- The University of Wellington encourages the recruitment of a diverse community of talented staff and students. Please refer to the [University's equity, diversity and inclusion framework](#) for more information.

If this opportunity is of interest and you meet the above criteria please email your cover letter, CV and a copy of your academic transcripts to [ruzica.dadic@vuw.ac.nz](mailto:ruzica.dadic@vuw.ac.nz), Antarctic Research Centre, Victoria University of Wellington.