

**PROJECT TITLE:** Future changes to rainfall over Antarctica and the Southern Ocean

**Project Science Theme:** Climate Change and Risk

**Project keywords:** Antarctica, sea-ice, rainfall, projections, impacts

**Lead Institution:** British Antarctic Survey (BAS)

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### **Project aims and methods:**

The Antarctic ice sheet contains 90% of the world's glacier ice and is surrounded by seasonal floating sea-ice, which together form an integral part of the Earth's climate system. However, although precipitation over these regions is largely snow-dominated at present, climate models suggest that in the future the Antarctic ice sheet and sea-ice will experience more rainfall due to climate change. This is likely to have pronounced impacts by increasing melting of snow and ice, which in turn will affect sea-ice extent and thickness, ice sheet mass balance, global sea level, as well as the success of flora and fauna (including penguin colonies). Yet despite the severity of these impacts, considerable uncertainty exists regarding the frequency and intensity of changes to snow and rain over these regions.

This project aims to address this significant knowledge gap, with possible research directions including: i) using observational datasets (e.g., satellite-based) to quantify present-day occurrences of rainfall for Antarctica and identifying their associated atmospheric circulation patterns, and ii) investigating future changes in rainfall (and their associated circulation patterns) by analysing projections for Antarctica from IPCC Coupled Model Intercomparison Project Phase 6 (CMIP6) global climate models from present-day to 2100 for multiple climate change scenarios.

### **Useful recruitment links:**

For information relating to the research project please contact the lead Supervisor via:  
[anmcr@bas.ac.uk](mailto:anmcr@bas.ac.uk)

To submit an application, please send your CV, the completed GW4plus personal statement, degree transcripts, degree certificates and contact details of two academic referees directly to the Lead Supervisor of the project before **the application deadline Monday 13 January 2025 @ 2359 GMT.**

Should you have any enquires, please contact [Ali Teague](#) at the BAS Student Office

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