



**Investigating changing surface melt patterns on the Antarctic Peninsula**

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Over the last 50 years, the Antarctic Peninsula has warmed faster than the rest of Antarctica, with surface temperatures now frequently exceeding 0°C during summer, causing surface melting. This meltwater typically drains over the ice sheet surface and ponds in surface depressions or crevasses. Under certain conditions and if sufficient meltwater is available, the ponding of meltwater can cause crevasses to penetrate vertically through the ice, which can impact ice sheet stability. Despite substantial warming of the Antarctic Peninsula in recent decades, including several heatwaves in recent years, little is known about how meltwater ponding has changed during that time. This project will seek to fill this knowledge gap by combining manual and automated analysis of a range of satellite image products acquired since the 1970s, in order to quantify changes in the extent of surface meltwater. In doing this project, the student will significantly advance our understanding of Antarctic Ice Sheet hydrology, and so the results of this work may be suitable for publication. The student will also develop their skills in geospatial data analysis and computer programming – prior experience of the latter is desirable, but not essential.