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CHANGES IN WESTERN ANTARCTIC PENINSULA PRECIPITATION

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The Antarctic Peninsula has experienced dramatic changes in near surface temperatures over the past 50 years, greater than anywhere else in the southern Hemisphere. However, the magnitude of observed warming varies markedly throughout the year, which has implications for interpreting regional climate signals in ice cores. Therefore, we investigate precipitation changes during this recent warming trend using observations of precipitation in meteorological reports from Rothera station, on the western Peninsula. These observations are shown to vary coherently with regional precipitation derived from the European Centre for Medium-Range Weather Forecasts re-analysis (ERA-40) data from the mid-1980s. Thus, in this recent period we are able to utilise the reanalysis data to assess the relationships between atmospheric circulation over the Amundsen-Bellingshausen Sea and precipitation on the western Peninsula. We subsequently test these relationships by determining whether accumulation data obtained from shallow cores located in the southwestern Peninsula are consistent with ERA-40.