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DIAGNOSING ACCUMULATION VARIABILITY IN THE WEST ANTARCTIC PENINSULA

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The West Antarctic Peninsula exhibits significant meteorological inter-annual variability, which, coupled with the high sensitivity of the region to climate change, promotes it as an important location for scrutiny. In early 2006, three shallow ice cores were retrieved from islands in the southwest of the Peninsula. Automatic weather stations at each of the sites recorded the previous 12 months of hourly in-situ data, while twin sonic range sensors detected contemporaneous accumulation changes. Back trajectory analysis was performed for a number of large precipitation events to ascertain signatures of air mass origin within the chemistry of the cores. In addition, EOF analysis of monthly ERA40 accumulation data was undertaken in order to identify preferred patterns of spatial variability and the sensitivity of these to changes in the wider circulation. These analyses are synthesised to characterise circulation indices for the region, which have the potential to improve the interpretation of deeper Peninsula ice core records.