



EINLADUNG

zum

VERA - SEMINAR

von

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Tropical Signals in Antarctic Ice

Southern Hemisphere climate variability is dominated by two oscillating drivers: the El Niño Southern Oscillation (ENSO) and the Antarctic Oscillation (AAO). This Tropical-Polar dipole is a complex structure with significant spatial and temporal variability as well as inherent leads and lags and multifaceted interference patterns. Combined, the two forcings have the potential to partially off-set or enhance their influence on each other and the Southern Hemisphere as a whole. It is therefore important to consider these drivers not in isolation but as an interactive tandem.

Examining ENSO and AAO correlation patterns in Antarctic meteorological and ice core data identifies significant shifts in the phase relationship between these drivers. Stable oxygen analyses and snow accumulation rates from snow pits sampled in the McMurdo Dry Valleys have been used to reconstruct variations in summer temperature and moisture availability over the last four decades. The temperature data show a common interannual variability. Comparison of the reconstructed and measured summer temperatures with the Southern Oscillation Index (SOI) and the AAO yield statistically significant correlations, which improve when phase relationships are considered. A distinct change in the phase relationship of the correlation is observed, with the SOI-AAO leading over the temperature records by one year before, and lagging by one year after 1988. These results suggest that over the last two decades summer temperatures are influenced by opposing ENSO and AAO forcings and support previous studies that identified a change in the Tropical-Antarctic teleconnection between the 1980s and 1990s.

Donnerstag, 19. April 2007, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Seminarraum von VERA**