

SAM Global Teleconnection at Multidecadal Time Scales

Robert Marter¹, Xiaojun Yuan²

¹ Millersville University, Millersville PA, ² Lamont-Doherty Earth Observatory, Palisades NY

This study investigates the global teleconnection of Southern Annular Mode (SAM). Reanalysis-2 data shows that there is a clear link between SAM and zonal and meridional winds in the tropical Indo-Pacific region. The coherent teleconnection pattern repeats for the three extreme SAM events in the instrumental period. The strongest teleconnection occurs in austral summers and during high SAM periods. A spectral analyses of the CMIP5 GISS-R pre-industrial and millennium model runs reveal that extreme SAM events are a natural variability occurring at multidecadal timescales. The GISS-R model, however, does not reproduce the observed teleconnection between SAM and the tropical Indo-Pacific region.