Changes in biomass burning mark the onset an ENSO-influenced climate regime at 42°S in southwest Tasmania, Australia

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 We use macroscopic charcoal and sediment geochemistry analysis of two proximal upper montane lakes located at 42°S in southwest Tasmania, Australia, to test the role of the southern hemisphere westerly winds (SWW) and the El Niño-Southern Oscillation (ENSO) in governing the climate of this sector of the southern mid-to high-latitudes. Inter-annual climate anomalies in the study area are driven by changes in both ENSO and the Southern Annular Mode (SAM - an index that describes seasonal to decadal shifts in the SWW), making it an ideal location to test assumptions about the varying influence of the SWW and ENSO, two important components of the global climate system, through time. We find multi-millennial scale trends in fire activity that are remarkably consistent with trends in hydroclimate reconstructed at the same latitude in southern South America, providing empirical support for the notion of zonally symmetric changes in the SWW governing the climate at this la