Figure S1: Model ensemble mean temperature difference between the LIA and the CWP. Note that models reproduce a small temperature variation (≤0.3ºC) between both periods in most of the Pacific Ocean. Magenta line: ITCZ position during the CWP; green line: ITCZ position during the LIA.
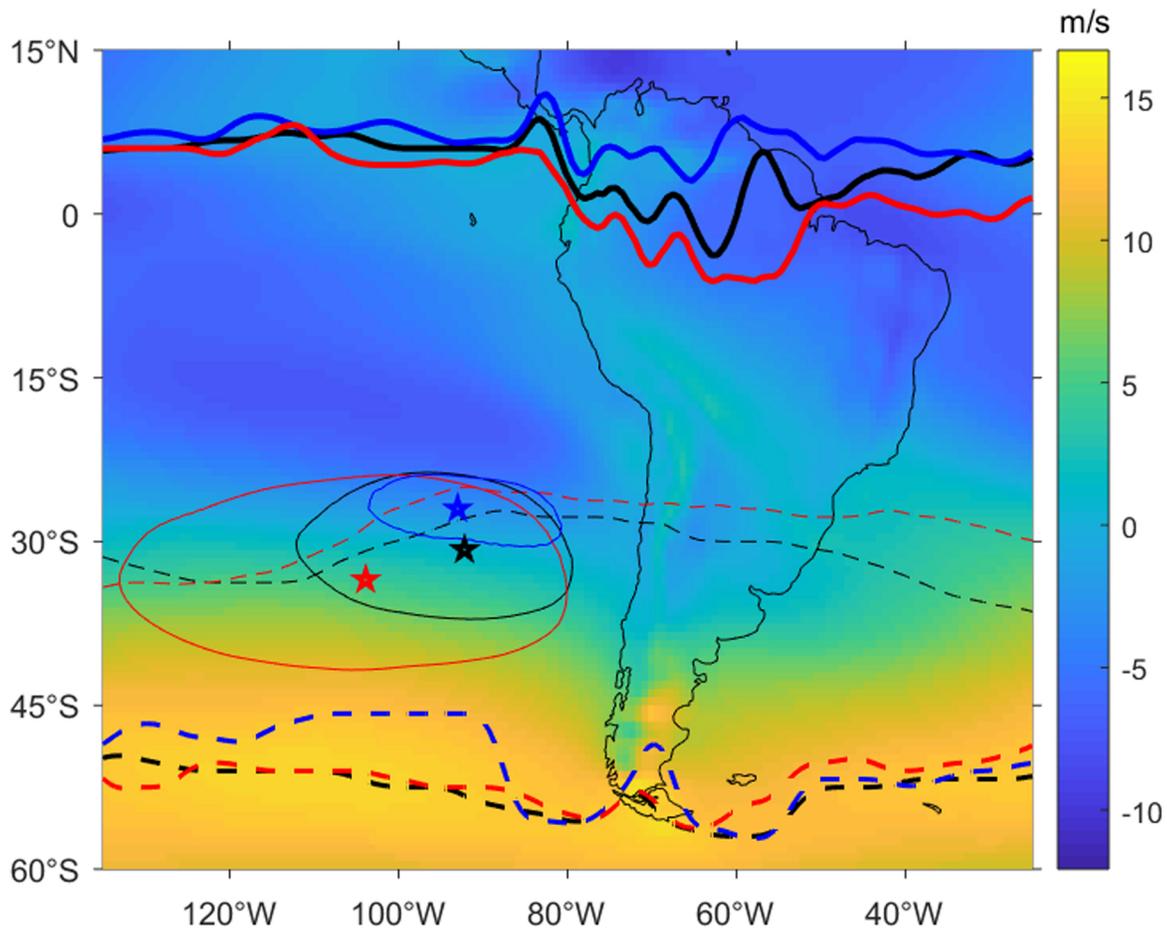
Figure S2: ERA-Interim climatology for the period 1979 to 2009 during austral winter (red lines), austral summer (blue lines) and the annual mean (black lines). Background colors show the zonal winds at 850 hPa. Thick solid lines denote the ITCZ position, thin solid lines indicate the SPSH position, thin dashed lines correspond to the STJ position and thick dashed lines denote the position of the SWW.