



A CMIP5 simulations of the mid-Holocene climates using CSIRO Mk3.6 climate model

J. Syktus (1,2)

(1) Queensland Climate Change Centre of Excellence, Brisbane, Australia (jozefs@tpg.com.au), (2) University of Queensland, Brisbane, Australia

The Queensland Climate Change Centre of Excellence (QCCCE) and the CSIRO Marine and Atmospheric Research have collaborated to complete many of the CMIP5 experiments. The CSIRO–QCCCE contribution to CMIP5 used the CSIRO T63 Mk3.6 climate model to perform most of the CMIP5 long-term experiments, several atmospheric-only experiments, and a comprehensive set of attribution experiments. This poster shows results of the comparison between the pre-industrial and mid-Holocene (6ka BP) simulations using the CSIRO Mk3.6 climate model (Syktus et al., 2011).

The mid-Holocene simulations was started at year 241 of the pre-industrial run and it was integrated for 400 years in parallel with the pre-industrial simulation. We present results of analysis using monthly rainfall totals to compute a meteorological drought index based on the Standardised Precipitation Index (SPI). We used 300 years of monthly rainfall totals for pre-Industrial and mid-Holocene simulations to derive the SPI. The SPI is an index that calculates the probability of precipitation for any selected time scale, based on the long-term precipitation record (McKee et al., 1995). Technically, the SPI is the number of standard deviations that the observed value would deviate from the long-term mean, for a normally distributed random variable. This presentation will focus on the large scale changes in precipitation in monsoonal regions of the globe resulting from the orbital changes in radiative forcing during the mid-Holocene.