Impact of precession on the climate, vegetation and fire regime in southern Africa during MIS4 (Supplementary material)

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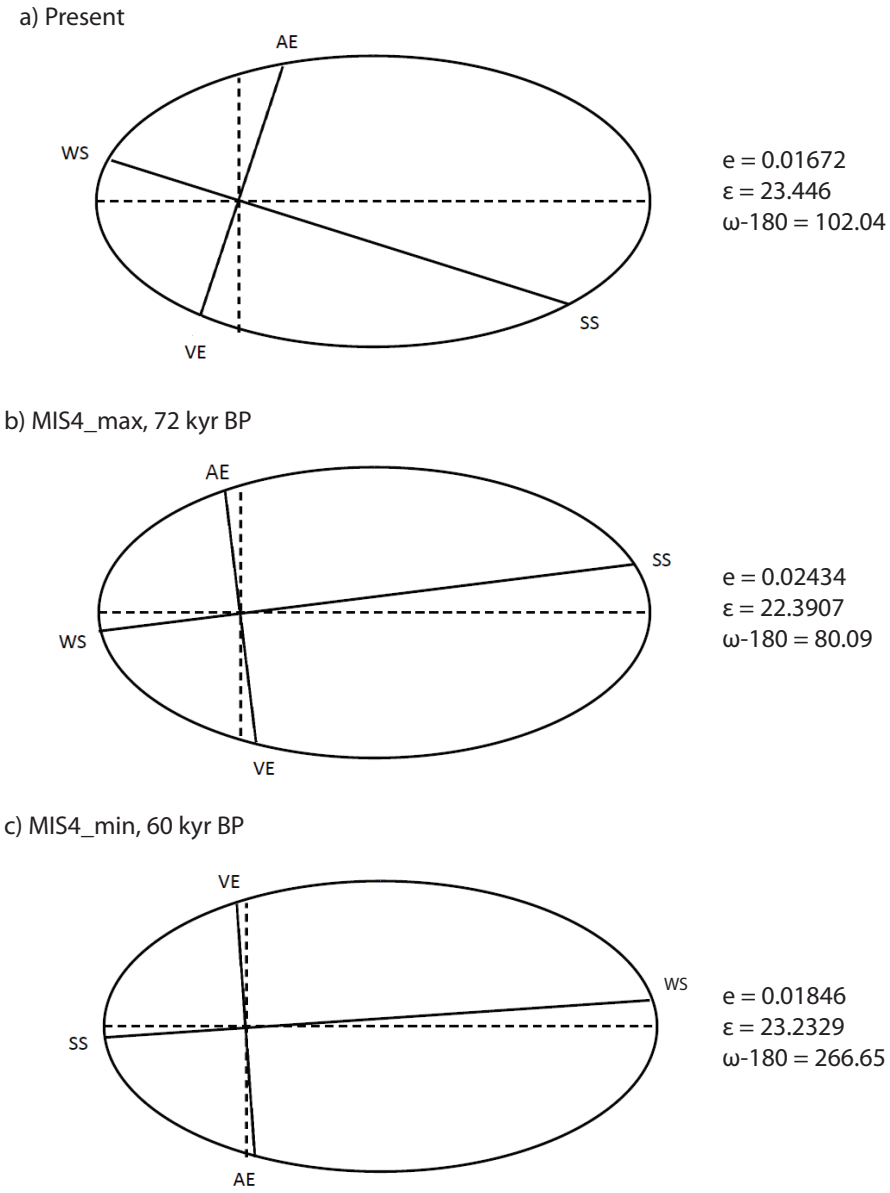

FIG. 1 – Earth's orbital configuration for a) present-day, b) MIS4_max, 72 kyr BP, c) MIS4_min, 60 kyr BP, where e is the eccentricity, ϵ is the obliquity and ω is the longitude of the perihelion. WS stands for winter solstice, VE for vernal equinoxe, SS for summer solstice and AE for autumnal equinoxe (for the northern hemisphere).

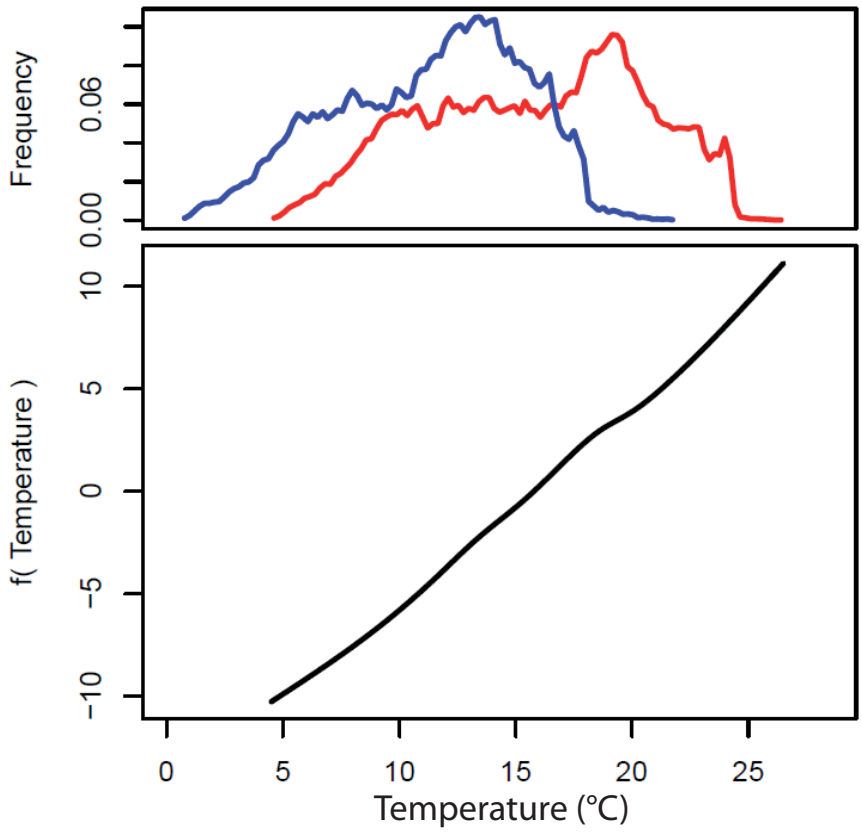

FIG. 2 – Top : histogram of monthly temperature values over southern Africa for the present-day IPSL simulation (red) and the MIS4_min simulation (blue) (values interpolated to 0.16°). Bottom : spline depending on temperature used for the downscaling.

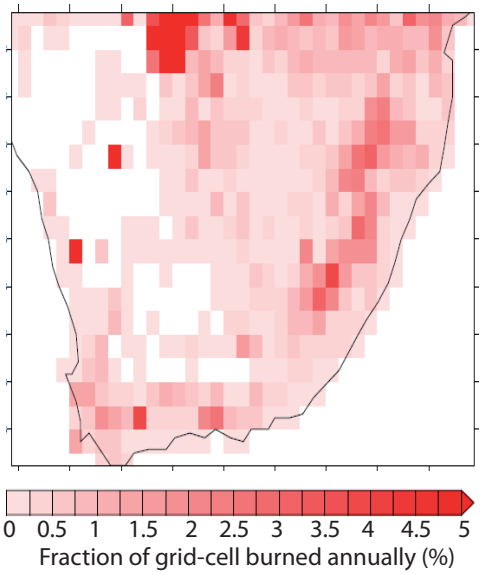

FIG. 3 – Observed annual burned area, average over 1997-2011 (as percentage of the area of a grid-cell). Data from the Global Fire Emissions Database (GFED, http ://globalfire-data.org).

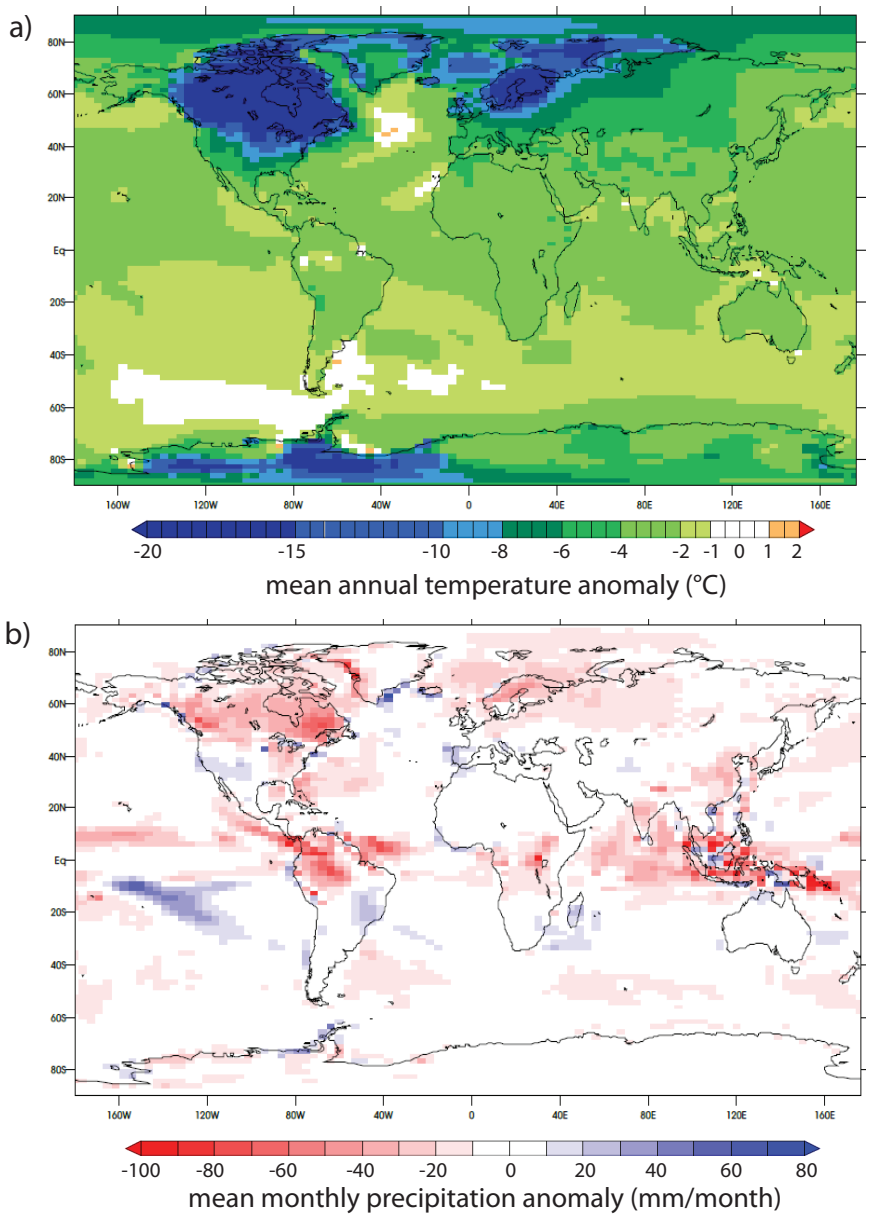

FIG. 4 – a) Mean air temperature anomaly and b) mean monthly precipitation anomaly simulated by IPSL_CM5A in MIS4_max compared to a present day simulation (MIS4_max - present).