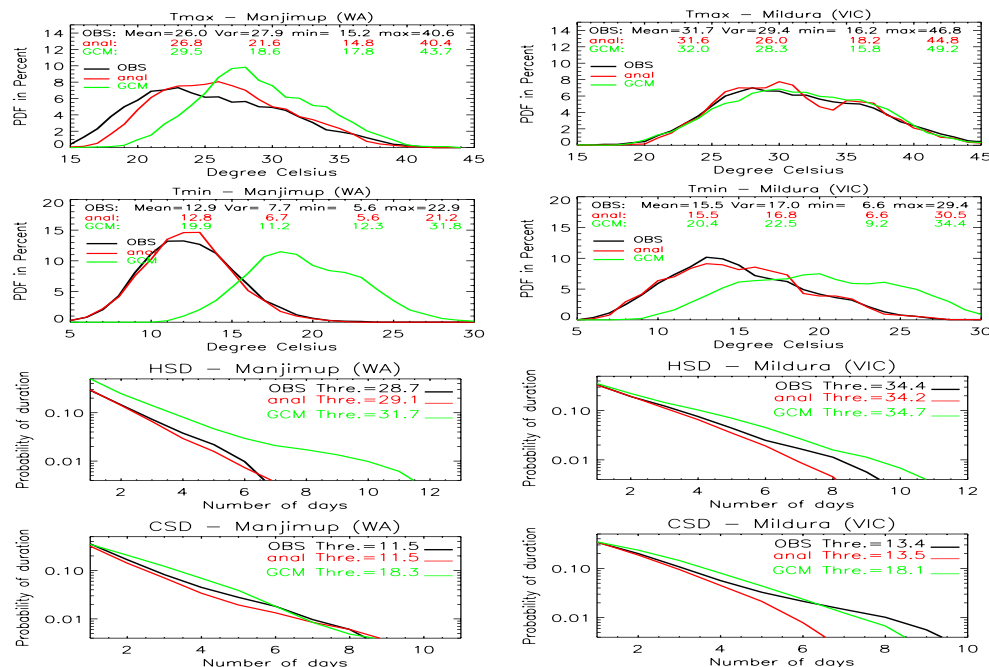


# Section IV: Application to Climate Model

The SM, developed and adapted during the validation is then applied to GCM predictors. No tuning is made on the parameters defined previously. The climate run was from a 1979-1988 AMIP simulation. The model is a state of the art atmospheric model developed by the Bureau of Meteorology and Research Center (BMRC). The horizontal resolution of the model provides information for grid boxes of approximately 250 Km in latitude by 350 Km in longitude over Australia.

Analogue are chosen amongst the entire set of available observations: 1970-1993. The benefit of using a downscaling method is seen by comparing the reconstructed series with the 2m-Temperature provided by the Global Model. Biases average for each season and per area of interest show the large reduction of GCM errors.

$T_{ref} - T_{ana} / T_{ref} - T_{gcm}$	DJF	MAM	JJA	SON	
Murray Darling Basin	Tmax	+0.38/+1.77	-0.20/+0.23	-0.07/-0.62	+0.30/-1.10
	Tmin	-0.06/-3.64	+0.09/-4.15	+0.13/-3.29	+0.16/-4.09
South West Corner	Tmax	-0.69/-0.95	-0.19/-0.85	-0.29/-1.39	+0.10/-2.50
	Tmin	+0.04/-5.40	+0.09/-4.41	+0.02/-2.13	+0.42/-4.81



Probability Distribution Function: the major bias observed of Climate Model surface Temperature are corrected and the PDF of the reconstructed series match the observed ones. Anomalous hot (HSD) and cold (CSD) spells: the threshold used are more realistic for the series obtained from the analogues. In most cases the anomalous spells of the reconstructed series are well in agreement with those from the observations.