



Decadal-timescale potential predictability of precipitation and temperature and changes with climate change

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The CMIP4 collection of model results for the IPCC AR4 provides the data for an internally consistent statistically stable multi-model estimate of decadal timescale potential predictability for both temperature and precipitation. Potential predictability is a statistical attempt to identify those regions and, indirectly those processes, that indicate the possibility of prediction on these long timescales.

Decadal potential predictability of temperature is found primarily over mid- to high-latitude oceans with very modest incursions into land areas on the western sides of the continents. The potential predictability of precipitation is a rather pale shadow of that of temperature and is essentially absent over land. Potential predictability on these timescales is found predominately in regions where the deeper ocean is connected to the rest of the climate system. The potential predictability of both temperature and precipitation are seen to decrease with climate change in the AR4 collection of climate models.