Temperature trends with reduced impact of ocean air temperature

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Temperature data 1900–2010 from meteorological stations across the world have been analyzed and it has been found that all land areas generally have two different valid temperature trends. Coastal stations and hill stations facing ocean winds are normally more warm-trended than the valley stations that are sheltered from dominant oceans winds.

Thus, we found that in any area with variation in the topography, we can divide the stations into the more warm trended ocean air-affected stations, and the more cold-trended ocean air-sheltered stations. We find that the distinction between ocean air-affected and ocean air-sheltered stations can be used to identify the influence of the oceans on land surface. We can then use this knowledge as a tool to better study climate variability on the land surface without the moderating effects of the ocean.

We find a lack of warming in the ocean air sheltered temperature data – with less impact of ocean temperature trends – after 1950. The lack of warming in the ocean air sheltered temperature trends after 1950 should be considered when evaluating the climatic effects of changes in the Earth’s atmospheric trace amounts of greenhouse gasses as well as variations in solar conditions.