

## **The effect of length and starting year on trend analyses of temperatures in Spanish mainland (1951-2010). Seasonal analyses: Summer (IV)**

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In this poster we applied the moving window approach (see Poster I of this collection) to analyze trends of summer and its corresponding months (June, July, August) temperature mean values of maximum (Tmax) and minimum (Tmin) in Spanish mainland to detect the effects of length period and starting year. Monthly series belong to Monthly Temperature dataset of Spanish mainland (MOTEDAS). Database contains in its grid format of 5236 pixels of monthly series (10x10 km).

The threshold used in spatial analyses considers 20% of land under significant trend ( $p < 0.05$ ). The most striking results are as follow:

- Tmax and Tmin seasonal trends affected mostly all the Spanish mainland, while the area affected decrease from 1983-2010 (Tmax) and 1987-2010 (Tmin). In both cases the areas affected significantly in recent decades are restricted to Eastern-coastland areas.
- Monthly analyses show highly differences between Tmax and Tmin. Only June Tmax show significant trend in extended areas, and in fact from 70's they are restricted to eastern coastland. Meanwhile both July and August Tmax trend affect particularly that area until mid 70's.
- Monthly trend analyses of Tmin show different patterns both in temporal windows and spatial distribution. Significant trend in June dominates practically all windows, while in July and August they predominate in south and eastern-Mediterranean coastland. No significant trend has been observed from middle of the 80's (< 20% of area).

In conclusion, summer trend analyses of Tmax and Tmin and their spatial distribution show clearly highly differences. In Tmax seasonal trend seems to be dominated by June Tmax behavior, while in Tmin the contribution of July and August must be considered particularly in southern and eastern-Mediterranean coastland. The most recent decades in Tmax and Tmin do not show significance, except in June Tmin.