

The effect of length and starting year on trend analyses of temperatures in Spanish mainland (1951-2010). Seasonal analyses: Spring (III)

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In this poster we applied the moving window approach (see Poster I of this collection) to analyze trends of spring and its corresponding months (March, April, May) 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:

- Seasonal Tmax shows that global trend was positive and significant until the mid 80's with higher values than 75% from between 1954-2010 to 1979-2010, being reduced after to the north region. So, from 1985-2010 no significant trend have been detected. Monthly analyses show differences. March trend is not significant (<20% of area) since 1974-2010, while significant trend in April and May varies between 1961-2010/1979-2010 and 1965-2010/1980-2010 respectively, clearly located in northern midland and Mediterranean coastland.
- Spring Tmin trend analyses is significantly (>20%) during all temporal windows, notwithstanding NW do not show global significant trend, and in the most recent temporal windows only affect significantly SE. Monthly analyses also differ. Not significant trend is detected in March from 1979-2010, and from 1985-2010 in May, being April the month in any temporal windows with more than 20% of land affected by significant trend.
- Spatial differences are detected between windows (South-North in March, East-West in April-May).

We can conclude Tmax trend varies accordingly temporal windows dramatically in spring and no significance has been detected in the recent decades. Northern areas and Mediterranean coastland seems to be the most affected. Monthly Tmax trend spatial analyses confirm the heterogeneity of diurnal temperatures; different spatial gradients in windows have been detected between months.

Seasonal Tmin show a more global temporal pattern. Spatial gradients of significance between months have been detected, in some sense contraries to the observed in Tmax.