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Observed and simulated temperature trends over the Iberian Peninsula over the period 1958-2000.

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The most important anthropogenic influences on climate are the emission of green house gases (GHG) and changes in land use. Both tend to increase the daily mean surface temperature, and usually it is very difficult to separate these two influences on mean temperature observed trends.

The differences between the trends derived from several temperature data sets over the Iberian Peninsula and a set of regional climate simulations are assessed. The regional climate simulations have been performed using the MM5 regional climate model driven by the ERA40 reanalysis and simulations with the ECHO-G atmosphere-ocean general circulation model.

The results indicate that part of the observed warming can not be directly attributed to GHG increase as represented in this simulations, and might be related to local land use changes. On the other hand, observed and simulated trends show different behavior sometimes not spatially consistent. It is argued that this could be related to the quality of the data sets.