



Rethinking large-scale weekly cycles in Central Europe

Arturo Sanchez-Lorenzo (1), Patrick Laux (2), Martin Wild (1), and Josep Calbó (3)

(1) ETH Zürich, Institute for Atmospheric and Climate Science, Zürich, Switzerland (arturo.sanchez@env.ethz.ch), (2) Karlsruhe Institute of Technology (KIT), Institute for Meteorology and Climate Research, Garmisch-Partenkirchen, Germany, (3) University of Girona, Group of Environmental Physics, Girona, Spain

Several recent works have shown a controversy about the reliability of non-urban weekly cycles over large-scales in Europe. For example, Sanchez-Lorenzo et al. (2008) found weekly cycles for several climatic variables in Spain, but this work was criticized by Hendricks Franssen et al. (2009). In Central Europe, using different climatic variables and several time periods, Bäumer and Vogel (2007) and Laux and Kunstmann (2008) showed significant annual weekly cycles over Germany. Contrarily, Hendricks Franssen (2008) and Barmet et al. (2009) did not find any significant annual weekly cycles over Switzerland. These two latter works mainly focused their analysis on precipitation, which is well-known as a climatic variable with high variability, and consequently it is more difficult to detect any significant change in their series.

In this work we present a seasonal analysis of a dataset with long-term series available in Switzerland and Germany, covering the major part of the 20th century, and using cloud cover (or sunshine duration as inverse of cloud cover) and diurnal temperature range (DTR) records, which can be considered as a proxy measurement of cloud cover and surface solar radiation. Thus, we focus our analysis on the possible indirect effect of anthropogenic aerosols, which from a physical point of view can show clear seasonal differences (e.g. Bell et al., 2008).

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