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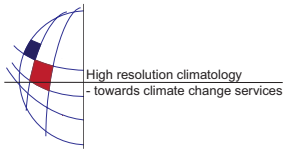

Foehn wind detection using numerical modelling

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In Romania, foehn is a short-lived atmospheric phenomenon, of a low to average intensity, not always highlighted by weather station observations. When such situations occur additional data are resorted to, rendering a continuous, aggregate image, in comparison to the punctual information yielded by weather stations.
This paper aims to describe how foehn is detected in northern Oltenia (the Inner Carpathian-Balkan Curvature), using numerical modelling. Results generated by the RegCM3 Regional Climatic Model thus represent an undisputed tool, their most important advantage being the 10-km spatial resolution. The presence of foehn in northern Oltenia and its climatic peculiarities have been disclosed through the analysis in time and space of the meteorological elements specific to the phenomenon (air temperature, wind speed and direction etc) over a 40-year interval (1961-2000). The paper presents a new methodology that can be used to estimate the probability of production and the foehn characteristics (intensity, duration etc.).
Interpretation of the RegCM3 model results has led to the statistical analysis of foehn occurrences within the studied area during the cold season (December, January and February). The resulted climatology, with fine resolution, can be used in foehn forecast of predictability.