



Trend analysis of regional heat wave warning using RegCM simulations

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Heat wave events are important temperature-related climatological extremes due to their impacts on human health. In the future, they are very likely to occur more frequently and more intensely not only in the Carpathian Basin, but in most regions of the world because of global warming. In order to develop adaptation and mitigation strategies on local scale, it is essential to analyze the projected changes related to heat waves.

In Hungary, three categories of heat wave warning are applied. They are associated to the daily mean temperature values. (i) Warning category 1 is issued when the daily mean temperature is larger than 25 °C. (ii) Warning category 2 is issued when the daily mean temperature for at least 3 consecutive days is larger than 25 °C. (iii) Warning category 3 is issued when the daily mean temperature for at least 3 consecutive days is larger than 27 °C. In this poster, frequency of these conditions are analyzed using regional climate model experiments of model RegCM with 10-km horizontal resolution adapted at the Department of Meteorology, Eotvos Lorand University in the frame of the CECILIA EU-project. The model RegCM is a 3-dimensional, sigma-coordinate, primitive equation model, and it was originally developed by Giorgi et al. Currently, it is available from the ICTP (International Centre for Theoretical Physics). The initial and lateral boundary conditions of the fine-resolution experiments have been provided by the global climate model ECHAM for the A1B emission scenario for three different time slices (1961-1990, 2021-2050, and 2071-2100).