



Synoptic analysis of heat waves over Croatia 2012-2016

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In this paper frequency and duration of heat waves in summer season (from June to September) from 2012 to 2016 were analyzed together with weather types and regimes during their appearance. Criteria for heat waves (warning levels yellow, orange, red) is the result of previous investigation of the relationship between mortality and thermal conditions of the atmosphere.

In this paper the event was defined as a heat wave if it lasts at least 3 days, where at least one of these days have the highest warning level (red).

Synoptic analysis of heat waves was done. Among 29 surface weather types the most frequent were ridge of high pressure and non-gradient anticyclonic and cyclonic pressure field. As expected, the upper level analysis showed that among 8 weather regimes the most common were ridge and non-gradient field.

Due to the geographical and climatological characteristics, analysis of heat waves was done separately for the Adriatic coast and continental part of Croatia.

During analyzed period there were 6 heat waves in continental part and 12 along the Adriatic coast. Five of them were simultaneously observed in continental part and along the coast (2012, 2013, 2015).

The most intense heat waves, according to duration, were observed in 2015. In 2014 heat waves were not observed, and in 2016 there were no heat waves in continental part of Croatia.

In average, duration of heat waves along the Adriatic coast was 6 to 13 days (in some part less) and in continental part 3 to 9 days. The maximum duration of heat wave was recorded at south part of Adriatic coast (Dubrovnik region) - from 17 July to 15 August 2015, with two interruptions (on 27 July and 2 August). The longest heat wave (July-August 2015) in south Croatia is result of persistent influence of upper level ridge which was stretching from southwest (North Africa) to northeast. During that episode in the other parts of Croatia heat waves were not so persistent due to weakening of the ridge as a result of penetration of cold air from the northwest.