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# Past, present and the possible future of cold wave alarm in Croatia

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Cold waves or cold spells, similar to warm ones, affect people causing increased mortality and morbidity. Thus, it is state obligation to organize and ensure the on time heat wave, but also the cold wave, warning system.

Similar to the heat wave warnings, issuing the cold waves warnings in Croatia is the responsibility of DHMZ - Croatian Meteorological and Hydrological Service (national weather service). However, while the criteria for issuing warnings on heat waves and the levels of these warnings are the same for National system and Meteoalarm system, the criteria for issuing warnings about the low temperature are not the same in those two systems. The mechanism by which the human body reacts to extreme cold is different from the reaction to extreme heat. Low temperatures greatly affect people, but also can significantly affect the energy supply, especially electricity, the freezing of liquids, etc. In other words, thresholds that become critical to health in some regions can differ significantly from the temperature values that can affect the energy sector i.e. economy, traffic, etc.

At present, criteria for the occurrence of cold waves that can be dangerous to human health in Croatia is determined using mortality data and air temperature data for the period 1983-2008. The three degrees of danger are determined by the degree of increase in mortality. As these is determined for just eight different areas in Croatia, and Croatia is geographically quite diverse country, there is a need to develop alarm on more detailed spatial scale. DHMZ is working on introducing the new system of cold alarm based on different, spatially more variable, thresholds for extreme temperatures.

In this presentation we will compare the use of the existing criteria for the occurrence of cold waves (based on the mortality and air temperature data thresholds) and the possible calculation of the cold waves occurance using some of the cold indices (e.g. ECACWDI, ECACWFI) - climate indices based on the daily temperature parameters.