EMS Annual Meeting Abstracts
Vol. 11, EMS2014-13, 2014
14th EMS / 10th ECAC
© Author(s) 2014

Review of recent results in modeling heat - mortality relation in Belgrade (Serbia)

Gorica Stanojević (1), Vlasta Kokotović (1), Jelena Stojilković (1), Aleksandra Spalević (1), and Yaroslav Vyklyuk (2)

(1) Geographical Institute "Jovan Cvijić" of the Serbian Academy of Sciences and Arts, Belgade, Serbia, (2) Computer Systems and Technologies Faculty, Bukovinian University, Chernivtsi, Ukraine

This paper presents and compares the results of recent started research of the heat- mortality relation in Belgrade (Serbia). The most important is building appropriate statistical model which can explain the extent of the impact of extreme air temperature on human health. For research area, the major problem is lack of data which are very important factors in heat-mortality analyses such as socio-economic structures, air pollution data etc. In our previous studies we used the quite common Poisson regression model to explore the impact of extreme summer temperatures on total daily mortality counts and three different causes of deaths (cardiovascular, celebrovascular and respiratory mortality). Present analyses are based on neural networks what is not usually model in this field. The special attention is on heat wave indices and their ability to recognize the episodes of mortality higher than expected as a base for implementation of Heat Health Warning System. A case of summer 2007 as extremely hot in Serbia show that all heat waves coincide with long-term maximum of daily mortality counts.