



Tendency of drought spells in the central bohemian region

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Increasing frequencies and magnitudes of drought events are the focus of current research on both the local and global scales. This tendency has been recorded in the 20th century, particularly in the last decade of 1990–2000, which was the warmest decade of the last century. Over the past decade, significant progress has been made in drought studies worldwide. However, in cooperation, working through global and regional partnerships, the goal of reducing the magnitude of economic, environmental, and social impacts associated with drought in the 21st century can be achieved. With respect to the studies of the drought episodes pattern in the Czech Republic, over the past decade many climatologists have studied the frequency and intensity of this event and the relationships between agriculture and crops. According to the Czech Hydrometeorological Institute source, there are two driest areas in Czechia, in which the first zone extends from the foothills of the Krušné Hory into the Labe River lowland and Central Bohemia as well as into Western and Southern Bohemia. The second driest area is in Moravia, mainly South-Moravia.

This paper describes the tendency of drought episodes in Central Bohemian region from 7 weather stations, including monthly rainfalls and temperature measurements obtained during the periods of 47 years (1961–2007) each. From the stations situate in the Central Bohemia was selected as typical for the whole area: Praha-Ruzyne (354 m), Chotusice (235 m), Pobebrady (196 m), Kladno (404 m), Tisice (168 m), Semčice (234 m) and Ondřejov (486 m). In this research, the Si aridity index was used for the Czech drought conditions. This index was developed to detect drought and wet spells and distinguish meteorological drought or agricultural drought. It presents a difference of monthly anomalies of temperature, precipitation and the amount of moisture in the soil, with their standard deviations. For the Si, the categories interval from extreme drought ($Si \geq 3$) to extreme wet ($Si \leq -3$), with normal falling within (-1, +1).

Already at the beginning 21st century was registered three drought years (2003, 2006, 2007), while 2003 had extreme and very widespread drought. According to Si index and the majority of weather stations the longest drought periods were noticed at the beginning of the 1990's and 2000's. In the meantime, moderate and severe intensity droughts are most frequent in April, July and September.

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