

Abstract

Title: Changes of lengths of periods with characteristic air temperatures

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Abstract: Lengths of periods with characteristic air temperatures were derived using two different methods (linear interpolation, robust locally weighted regression) for 10 stations in the Czech Republic and for output data of regional climate models HIRHAM and RCAO in 4 grid points. Averages for a forty-year period (1961-2000) and for a thirty-year period (1961-1990) were computed as well as averages for every decade. Considerable attention was also paid to the analysis of methods used in the research. Most stations showed lengthening of growing season and summer during the twentieth century. Decennary average length of growing season and summer shortened in the years 1971-1980. The comparison of output data of regional climate models HIRHAM and RCAO and measured station data showed that the thirty-year average lengths of growing season and summer estimated by the two models were reasonably accurate approximately half of all cases. The models' estimates were not accurate at all concerning decennary averages.

Keywords: robust locally weighted regression, characteristic air temperatures, growing season, regional climate models