



Long-term changes in lunar variation of precipitation over Europe

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The effect of the moon's influence on weather had been demonstrated in previous century by many authors, in some cases by careful statistical analysis of extensive data. It was often found that there was a cycle of one-half of the lunar synodic month in daily precipitation data series with the maximum some 3-5 days after syzygies. In the 1980's it had been reported in some studies that there was spatial and/or temporal progression of this variation. Our previous analyses of rainfall data in the Czech Republic indicated secular time shifts of the synodic signal but the limited area did not allow for examination of its spatial behaviour.

The daily series of observations at meteorological stations throughout Europe, presented at the website of European Climate Assessment & Dataset Project by the Project team of the KNMI, opened the way for investigation of the effect in area ranging from Ireland to Lithuania and from Norway to Italy. The analysis required rather complex treatment of massive datasets at 14 stations.

The preliminary results suggest probable spatial and/or temporal consequences. The stations in Western Europe demonstrate nearly parallel behavior with high correlation with the model curve in the first half of the 20th Century and high anti-correlation for the rest of the period while the marginal stations exhibit nearly no correlation at any moment of the century.