

The aim of this diploma thesis was to study the dependence of the intensity of mortality in the Czech Republic, according to the chosen causes of death, on the Solar activity during the increasing and decreasing phase of the Solar cycle in the period 1994-2011, using the methods of the multivariate statistical analysis.

The Solar activity was represented by the indices R, Kp, F10.7 and Dst, and also by the height of the F2 layer and TEC for the Czech Republic.

The typology of time profiles for causes of death was identified with the help of cluster analysis using time. The dependence between the analyzed time series was investigated using the multivariate statistical analysis. The correlation of the intensity of mortality from coronary heart disease, from stroke, Edwards' and Pataus' syndrom with the Solar activity parameters was discovered, as well as a stronger dependence on the ionosphere parameters related to the Czech Republic area.