

CLIMATIC CHARACTERISTICS USED IN THE DESIGN ROADWAY

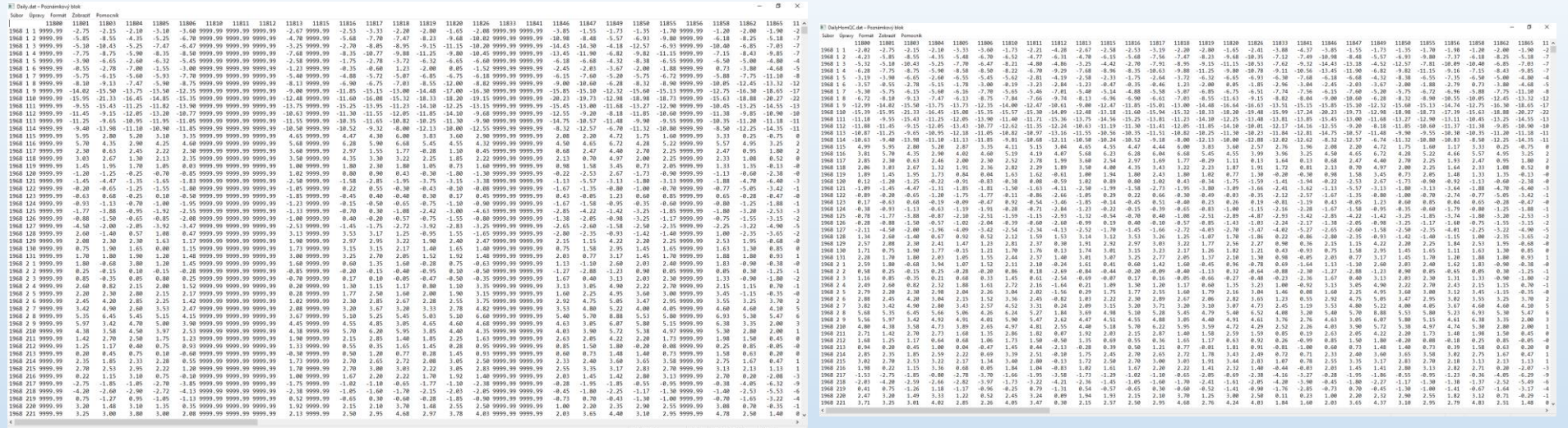
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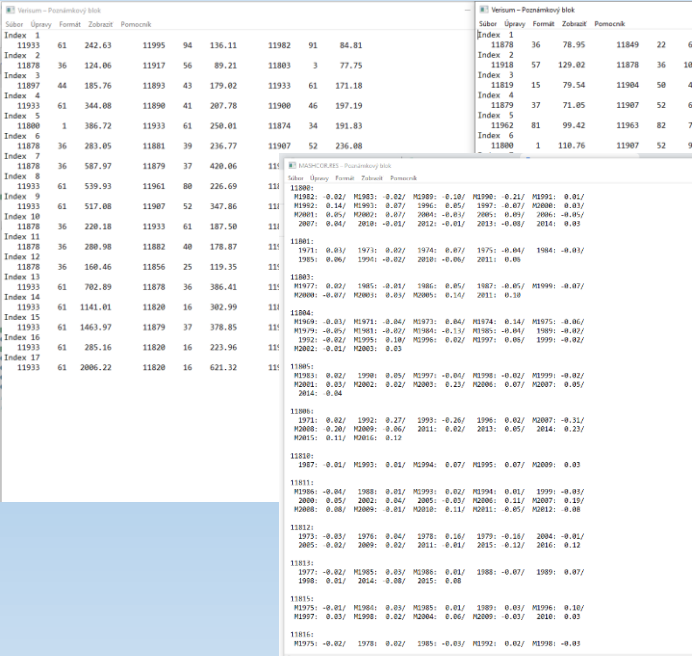
10th Homogenization Seminar and 5th Interpolation Conference, 12.-14. October 2020

- The main aim was to update the norm for the design of roads and traffic areas loaded with non-rail traffic and climatic effects.
- The main output are three maps for the periodicity $n = 0.10$; $n = 0.15$ and $n = 0.25$ and map with the average annual air temperature for the period 1968 – 2017 in Slovakia.
- **Overview of the main steps for final maps :**
 - - data preparation Average daily air temperature for the period 1968 - 2017
 - - Homogenization in program MASH 3.03
 - - Interpolation of climate data in the GRASS GIS program 6.4.3
 - - map processing of interpolated data layers by ArcGIS program

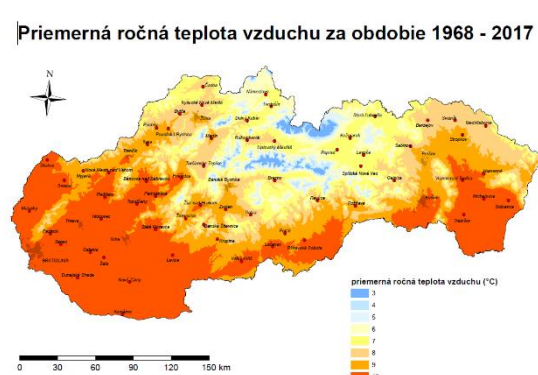
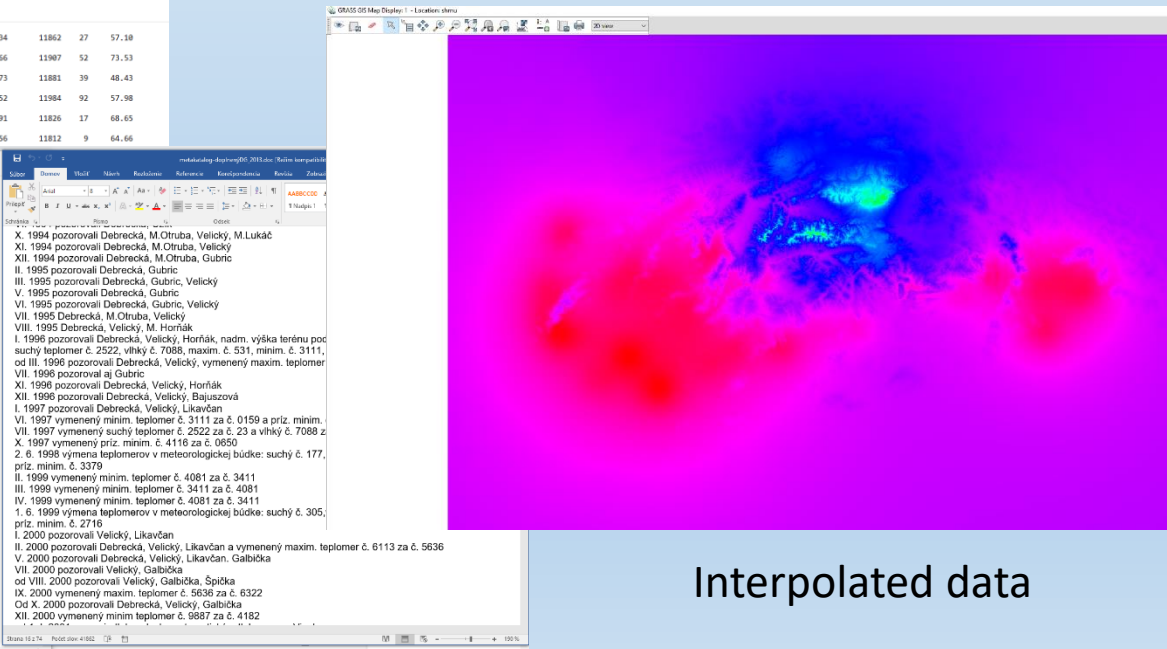
From data to map



Data series



Homogenized series



Interpolated data

Conclusion:

- The results presented in the paper show changes in the design values of the frost index for periodicity $n = 0.10$; $n = 0.15$ and $n = 0.25$ and changes in average annual air temperature for the period 1968 – 2017 in Slovakia.
- We used 93 meteorological stations for homogenization.
- **Most inhomogeneties were caused by relocating the station or changing the observer, or replacing the instrument.**
- We calculated the frost index using the Pearson coefficient.
- The maps of average date temperature and frost index, were interpolate with 3D method in GIS Grass.
- The resulting maps form the basis for updating the norm and are intended to adapt to the new climatic conditions for the design of roads and traffic areas burdened by non-rail traffic and climatic effects.
- all temperature regions have shifted slightly to the north

Thank you for your attention