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Visual representation of CORDEX climate data by using QGIS

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The majority of studies are dedicated to the analysis of climate change and climate models with no regard for data visualization part. Therefore, this research is aimed at highlighting challenges, with an emphasis on spatial referencing that can occur while visualizing CORDEX data. CORDEX data are stored in NetCDF file format, and sometimes georeferencing may be misconceived in QGIS software. For this reason, two techniques of georeferencing data are examined in this work. The first way of data georeferencing is re-projecting coordinates from original projection to an interpolated latitude/longitude grid. The second way is re-encrypting initial data file so that QGIS is able to interpret projection information. Preference of using QGIS explained by two reasons: it is open source GIS application and it has expanded visualization toolkit.

In addition, there are a great deal of climate models based on CORDEX data for some regions whereas there is a lack of climate projections for particular areas. In this regard, carrying out analysis for the region of Kazakhstan is beneficial. Outcomes of this research may stimulate spreading local climate models for Kazakhstan territory. Results are represented in the form of maps of Kazakhstan illustrating temperature change over 21st century time period.