



Increasing spatial resolution of CHIRPS rainfall datasets for Cyprus with Artificial Neural Networks (ANN)

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The use of high resolution rainfall datasets is an alternative way of studying climatological patterns in regions where conventional rain measurements are sparse or not available. Starting in 1981 to near-present, CHIRPS (Climate Hazards Group InfraRed Precipitation with Station data) dataset incorporates a $5 \times 5 \text{ km}^2$ resolution satellite imagery with in-situ station data to create gridded rainfall time series for trend analysis, severe events and seasonal drought monitoring. The aim of this work is to further increase the resolution of this rainfall dataset for Cyprus to $1 \times 1 \text{ km}^2$ by correlating the CHIRPS dataset with altitude information, NDVI vegetation index from satellite images at $1 \times 1 \text{ km}^2$ and precipitation measurements from the official raingauge network of the Cyprus Department of Meteorology, utilizing Artificial Neural Network models.