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the releationship between topography and some climate parameters in the Central Anatolia region in Turkey

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A two phases research implemented to determine the spatial variability of climate parameters and the effect of topography on climate parameters in non-homogeneous topography.

In first phase; kriging and co-kriging geostatistical interpolation techniques were compared to determine which one is more successful for spatial distribution of climate parameters. Based on the MAE, MRE and RMSE values of predictions, Disjunctive Kriging should be used for humidity, precipitation and sunshine duration interpolation. The inclusion of elevation as a covariate resulted in the reduced errors. If elevation data is available than Simple Cokriging interpolation technique should be used for interpolation of temperature, solar radiation and wind speed. Simple Kriging should be used for when DEM data is unavailable.

In second phase; stepwise, least squares, multiple regression equations were developed. The multiple regression results were more significant than were the individual, pairwise correlation relationships. Separate regression models for each dataset and both response variables varied in their ability to explain variability in the response, with R2 values between 0.125 and 0.817.