



Stochastic investigation of the spatial variability of precipitation over Crete

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The island of Crete is located at the Eastern Mediterranean and is expected to be significantly affected by future climatic variations. The island is monitored from 82 rainfall stations that cover the whole area of the island. Information is available at monthly and annual basis since 1981. This work examines potential spatial and temporal rainfall variability by employing statistical tools (such as the climacogram, i.e. variance of the scaled process vs. scale) to identify potential similarities in the dependence structure and marginal probability distribution. Finally, the spatial analysis involves the application of novel spatial dependence functions as well as a common expression for the correlation structure and marginal density distribution.