Geophysical Research Abstracts, Vol. 7, 04263, 2005 SRef-ID: 1607-7962/gra/EGU05-A-04263 © European Geosciences Union 2005



## A metric of linear parametric models for daily rainfall series analysis

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In this paper a procedure to compare dynamic components of time series is described. This technique is based on a metric of linear parametric models. Given a set of series and estimated the optimal models (AR, MA, ARMA, FARMA, etc.) a distance index is defined comparing the infinite autoregressive representation of series (AR( $\infty$ )). This approach is applied on a large data set of daily rainfall series observed in North-West of Italy. Around 300 series were modeled and analyzed. This procedure allows us to compare the autocorrelation structures of the rainfall series. Knowing the distance matrix of the data set, the stations can be clustered through multidimensional scaling procedures on the basis of their autocorrelation structures similarities. Physical reasons that are behind this differences in the time series behavior are speculated, and possible relationships with physical parameters influencing this variability are explored.