Geophysical Research Abstracts
Vol. 14, EGU2012-11109, 2012
EGU General Assembly 2012

Trends in a nonlinear world

S. M. Barbosa
University of Lisbon, IDL, Lisboa, Portugal (sabarbosa@fc.ul.pt)

In most geoscience disciplines the identification and quantification of trends is a major scientific goal. The desire to predict what will happen in the near future based on geophysical observations from the present and the recent past, as well as from numerical models, is not only of scientific interest in itself but is also a pressing demand from policy makers and the public in general. Trends in the world's temperature, global sea-level or water availability, for example, are of paramount societal and economic importance. Yet quantifying trends in geophysical variables characterising a complex and nonlinear system such as Earth's remains a challenging task. Issues such as the definition of trend itself, the identification of regime shifts, or the characterisation of scaling and long-memory behaviour require appropriate methodological approaches. These will be illustrated in the context of the analysis of sea-level and climate time series.