

Looking for a Connection between Oceanic Regions with Trends in Evaporation with Continental Ones with Trends in Precipitation through a Lagrangian Approach

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Abstract : One of the hot spots of climate change is the increment of ocean evaporation. The best estimation of evaporation, OAFflux data, shows strong increasing trends in evaporation from the oceans since 1978, with peaks during the hemispheric winter and strongest along the paths of the global western boundary currents and any inner Seas. The transport of moisture from oceanic sources to the continents is the connection between evaporation from the ocean and precipitation over the continents. A key question is to try to relate evaporative source regions over the oceans where trends have occurred in the last decades with their sinks over the continents to check if there have been also any trends in the precipitation amount or its characteristics. A Lagrangian approach based on FLEXPART and ERA-interim data is used to establish this connection. The analyzed period was 1980 to 2012. Results show that there is not a general pattern, but a significant agreement was found in important areas of climate interest.

Keywords : ocean evaporation, Lagrangian approaches, continental precipitation, Europe

Conference Title : ICESE 2016 : International Conference on Environmental Sciences and Engineering

Conference Location : Rome, Italy

Conference Dates : March 21-22, 2016