



Detecting trends of global solar radiation in the Arctic

M. Chiacchio (1)

IACETH

This study is an analysis of the seasonal and interannual solar radiation variability of the Arctic region beginning in 1960 through 1990 from the Environmental Working Group Arctic Climatology Project. This dataset provides more than 40 years of meteorological parameters constructed from the Arctic basin as well as from coastal stations, and synoptic data from ships, buoys, and drifting ice stations. In particular, the annual mean computed from hourly global, diffuse, and direct radiation measurements for 17 Solar and Meteorological Surface Observation Network (SAMSON) stations in Alaska from January 1, 1961 through December 31, 1990 will be analysed. Other measurements that will be evaluated are the annual mean atmospheric transparency during the same period. The time series of these radiation budget components will be presented and linear regression analysis will be applied to characterize their trends. Probable causes of the resulting radiation trends will be discussed with a comparison to current trend analysis of solar radiation in similar climate conditions as well as those reported in global studies.