CLOUD COVER EFFECTS OVER UV RADIATION:
PRELIMINARY RESULTS AT GIRONA, SPAIN

D. Pagès, J. Calbó, J.-A. González
Departament de Física and Institut de Medi Ambient, Universitat de Girona, Spain
(josep.calbo@udg.es / Fax. +34 972 418098)

Along with ozone column and aerosols, clouds is one of the most influencing factors that modify solar ultraviolet (UV) irradiance reaching the ground surface. On the other hand, clouds are in general very variable both in time and space, and there are difficulties in their quantitative observation. Therefore, although the importance of cloud effects over UV is well established, there are relatively few studies that address the issue of clouds-UV interaction in detail. The Department of Physics at University of Girona is running a radiometric station that includes, since the year 2000, an erythemal-UV instrument and a Whole Sky Camera device, both continuously measuring and picturing. In this poster, some preliminary results about the effect of clouds over UV erythemal irradiance are presented, based on these simultaneous UV and sky informations. Sky photos are automatically processed to get estimations for cloud cover. Measured UV erythemal irradiance is divided by a model estimate of cloudless sky irradiance under the same conditions of zenith angle and ozone. With this methodology, reduction of UV irradiance by clouds is often observed when cloud cover is greater than 5 tenths, while UV enhancements are found for cloud cover as high as 8 tenths. Of course, longer data series and a detailed analysis considering cloud type as a relevant variable is needed in order to obtain more robust results.