

## Assessing the irradiance on inclined surface from the HelioClim databases

L. Wald – 2007-11-14

The HelioClim databases HC-2 and HC-3 delivers hourly values of irradiance ( $\text{W}/\text{m}^2$ ) on a horizontal plane.

The method used to derive the irradiance on an inclined surface from global irradiance on a horizontal plane consists in 1) assessing the diffuse fraction on the horizontal, 2) compute the direct by removing the diffuse from the global irradiance, 3) compute the diffuse, reflected and the direct on the inclined plane, and 4) summing up these components for obtaining the global.

The algorithm is that used in the European Solar Radiation Atlas (2000). Underlying algorithms are those from Liu and Jordan (1960), Klein, Erbs and Duffie (1982), Collares-Pereira and Rabl (1979) and Muneer (1990).