

An Improved Model of Estimation Global Solar Irradiation from in situ Data: Case of Oran Algeria Region

Authors : Houcine Naim, Abdelatif Hassini, Nouredine Benabadji, Alex Van Den Bossche

Abstract : In this paper, two models to estimate the overall monthly average daily radiation on a horizontal surface were applied to the site of Oran (35.38 ° N, 0.37 °W). We present a comparison between the first one is a regression equation of the Angstrom type and the second model is developed by the present authors some modifications were suggested using as input parameters: the astronomical parameters as (latitude, longitude, and altitude) and meteorological parameters as (relative humidity). The comparisons are made using the mean bias error (MBE), root mean square error (RMSE), mean percentage error (MPE), and mean absolute bias error (MABE). This comparison shows that the second model is closer to the experimental values that the model of Angstrom.

Keywords : meteorology, global radiation, Angstrom model, Oran

Conference Title : ICWEEM 2015 : International Conference on Water, Energy and Environmental Management

Conference Location : Paris, France

Conference Dates : December 30-31, 2015