List of Symbols

Symbol	*Description*
A, B, C	Angstrom Constant
A_1, B_1 C_1, D_1	Local Coefficients used in Cloud Radiation Modelling
DBR	Diffuse Beam Ratio
DBT	Dry Bulb Temperature
ETR	Extra- terrestrial Radiation
$\hat{G}(x_o)$	Sum of all Station in Spatial Consistency Test
$G(x_o)$	Individual Station Value in Spatial Consistency Test
H_d	Hourly Diffused Radiation Value
H_g	Hourly Global Radiation Value
$I_{absorbed}$	Absorbed Radiation, by Atmosphere
$I_{reflected}$	Reflected Irradiance, back to Space
I_B	Beam or Direct Horizontal Irradiation
$I_{B,C}$	Beam or Direct Horizontal Irradiation at Clear Sky
I_{BN}	Beam Radiation at Direction of the Rays
I_D	Diffused Horizontal Irradiation
$I_{D,C}$	Diffused Horizontal Irradiation at Clear Sky
$I_{D,OC}$	Diffused Horizontal Irradiation at Overcrowded Sky
I_E	Extraterrestrial Radiation
I_G	Horizontal Irradiation
$I_{G,C}$	Horizontal Irradiation at Clear Sky
K_d	Earth-Sun Correction Factor
N	No. of Stations
O	No. of Stations Cloud presence (Scale 1-8 Oktas)
P_{atm}	Atmospheric Pressure
Prs	Station Surface Pressure in milli-Bars
R	Maximum Distance Between Stations
R^2	Coefficient of Determination
R_L	Rayleigh Diffuse Limit
SD, SD_{max}	Sunshine Duration, Max Sunshine Duration
SF= n/N	Ratio of Measured Sunshine and Averaged Sunshine (Sunshine Factor)
T_{LK}	Linke Turbidity
T_{rd}	Theoretical Diffuse Irradiance
WBT	Wet Bulb Temperature
a,b	Constants used in Theoretical Radiation Calculation
(a_1---a_n), (b_1---b_n), (c_1----c_n)	Constants used in Quartile Analysis
d,e,f,g,h,i	Constants used in Rayleigh Calculation
j,l, d_1	Constants for [Skartveit et al., 1987]
a1,b1,c1	Coefficients used in Gap Filling with 95% Confidence Bounds
d_z	Station in between distance (x_o with other stations)
Exp	Exponential
H	Solar Elevation Angle
k_t	Clearness Index
k_t'	Alternate Sky Clearness Index
k_n	Direct Beam Index
k, k_o, k_1	Diffuse Horizontal Transmittance
M	Air Mass
N	No. of Days

p1,p2,p3…,p9	Coefficients used in Gap Filling with 95% Confidence Bounds
r_s	Ground Albedo
r_α	Cloudless Sky Albedo
w_z	Interpolation Coefficient
$\bar{x}$	Mean
x_i	Measurement Value
$\bar{x}_i$	Gap Filling Model Output
x_o	Station Location
x_z	Next Station Location
z	Solar Zenith Angle
α	Solar Altitude
β	Location Constant for [Skartveit et al., 1987]
δ	Declination Angle
δ_r	Rayleigh's Optical Depth
ε	Earths Eccentricity Factor
Φ	Latitude Angle
σ_n	Standard Deviation
τ	Atmospheric Transmittance
τ_α	Mie Scattering
τ_g	Transmittance Ratio for Mixed Gases Scattering
τ_o	Transmittance Ratio for Ozone
τ_r	Rayleigh Scattering
τ_w	Transmittance Ratio for Water Vapour Scattering
ω	Solar Hour Angle