normal to that surface.

Additional Angles:

These angles defines the position of the Sun in the sky.

θ_z Zenith angle

Angle between the vertical and the line to the Sun (i.e) the angle of incidense of beam radiation on a horizontal surface

α_s – Solar Altitude angle :–

The angle between the horizontal and the line to the Sun, (i.e) the Complement of the Zenith angle.

γ_s – Solar azimuth angle:

The angular displacement from South of the projection of beam radiation on the horizontal plane, displacements east of South are negative and west of South are positive.

$$\delta = 23.45 \sin\left(360\left(\frac{284+n}{365}\right)\right)$$