The description of test cases for a nonabsorbing homogeneous layer under wide beam illumination conditions (1-D)

3 cases:
1) Rayleigh ($\tau = 0.3262$)
2) Aerosol ($\tau = 0.3262$)
3) Cloud ($\tau = 5.0$)

The phase matrices for aerosol and cloud are attached.

The Rayleigh phase matrix is given as

$$\frac{3}{4}\begin{pmatrix} 1+\mu^2 & \mu^2-1 & 0 & 0 \\ \mu^2-1 & 1+\mu^2 & 0 & 0 \\ 0 & 0 & 2\mu & 0 \\ 0 & 0 & 0 & 2\mu \end{pmatrix},$$ μ is the cosine of the scattering angle

Output:

I,-Q,U,-V for the transmitted and reflected diffuse light in the following format:

Viewing zenith angle, (I,-Q,U,-V at azimuth =0 degrees),(I,-Q,U,-V, at azimuth=90degrees),(I,-Q,U,-V, at azimuth 180 degrees)

for 3 cases (6 tables in total, 3cases*2(transmission, reflection)=6tables)

Input:
Incidence zenith angle(IZA): 60 degrees from normal
Relative azimuth: 0, 90, and 180 degrees
Viewing zenith angle(VZA): 0(1)89 degrees

As a matter of fact not I,Q,U,V but normalized quantities must be calculated:
R=pi*I/cos(IZA)/E_0
E_0 is the incident light irradiance at the top of the layer (and similar for Q,U,V) – both in reflection and transmission.

Azimuth=0 degrees corresponds to the forward scattering (at IZA=VZA).

Attention: V=0 for Rayleigh scattering, U=V=0 for the case of relative azimuths 0 and 180 degrees
Attention: Please, multiply your results for Q and V by (-1) before the comparison with data shown in the tables.