ATMO 656A. Atmospheric Radiation and Remote Sensing
Project 6 (10 points)

Thursday, April 4, 2024
Due date: April 11, 2024

MIE SCATTERING

This program is designed to compute scattering by stratified spheres, but for this exercise, simply set the inner radius to be equal to the outer radius.

1. Play with the program to make sure that you understand what the inputs and outputs are.

2. To make sure that it is working correctly, reproduce the Q_{ext} and g as a function of size parameter. (The index of refraction values are given on the graph)

3. As a further test, reproduce the plot of specific extinction and absorption handed out in class. You may simplify your work by doing only two cases: a) n=2-0.66i and b) n=1.5-0.0. Plot both extinction and absorption, as well as asymmetry factor g as a function of particle radius.

4. Remove the comments and compute the phase function for each of two cases in part 3 as a function of angle using an increment of 1 degree. Plot these functions.