

All about logs

Setting up AGN3 Sec 2.1

Why did the simulation stop?

- ◆ **Various stopping reasons given in Hazy 2, Sec 1.6**
- ◆ **Default is to stop when gas temperature falls below 4000 K, a region probably near the H^+ - H^0 ionization front.**
 - But is this what you want?

Is something goes wrong


- ◆ **Cloudy is designed to be autonomous and self aware**
- ◆ **The calculation is monitored as it progresses**
- ◆ **The code should explain what happened**

Open vs closed geometry Hazy 2.3

Open Geometry




Inner Radius r_0



Outer Radius



Depth Δr



Closed Geometry



Covering and filling factors

- ◆ **Covering factor**
 - AGN3 ...
- ◆ **Filling factor, how to do clumps**
 - AGN3, hazy1

Try again with “sphere” included

The overview output

- ◆ **Plot H^+ , H^0 structure**
- ◆ **Add He^+ , He^{++} , He^0 to that**

- ◆ **Copy input script, rename save output, lower stellar temperature to $3e4K$, do same**

Plotting the radiation field

16.43 Save continuum

This command is a primary mechanism for saving the predicted spectrum.

16.43.1 Lines in the spectrum

Emission lines are included in the output for all **save continuum** commands except **save transmitted continuum**. They are visible in the net emitted continuum. Labels giving the strongest lines contributing to each wavelength are given in the third to last column in the save output. More than one line will contribute to many wavelength cells and the last column indicates the number of lines within that cell.

The **print continuum indices** command will list the labels for all lines that enter into each cell. This provides a way to see all lines that contribute. The **print line sort wavelength** can be used to understand the relative contributions when multiple lines contribute at a particular wavelength or energy.

Figure 16.1 shows the incident SED as the smooth red line, while the black line gives the net emission with a warm absorber long the line of sight.

The rest of the output

- ◆ **Hazy 2, Chapter 7**