
The optimizer

Hazy 1 Chap 17

Specify observed quantities

- ◆ **Series of “optimize” commands**
- ◆ **Column density**
 - optimize column densities
 - hydrogen 1 < 17
 - carbon 4 17.4 error =.001
 - silicon 3 14.6 // The Si+2 column density
 - end of column densities

Luminosity or intensity of normalization line

- ◆ optimize intensity -0.3
- ◆ normalize to "O 3" 5007
- ◆ // we want a 5007 luminosity of $10^{34.8}$ erg/s
- ◆ optimize luminosity 34.8

Line spectrum

- optimize lines
- O 3 5007 intensity =13.8 error =0.1
- BInd 3727 < 2.1 (only upper limit)
- O 3 88.33m 1.2
- O 1 145.5m 1.6
- end of lines

Temperatures

- optimize temperature
- Hydrogen 1 36200K volume
- H2 0 150K radius
- end of temperatures

Controlling the optimizer

◆ Hazy 1 Sect 17.7

- Optimize increment = 0.4 dex
- Optimize iteration = 1000
- Optimize range -2.3 to 3.9
- Optimize tolerance 0.01