

ASTR 605: ISM

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1 Question 3

1.1 Part (a)

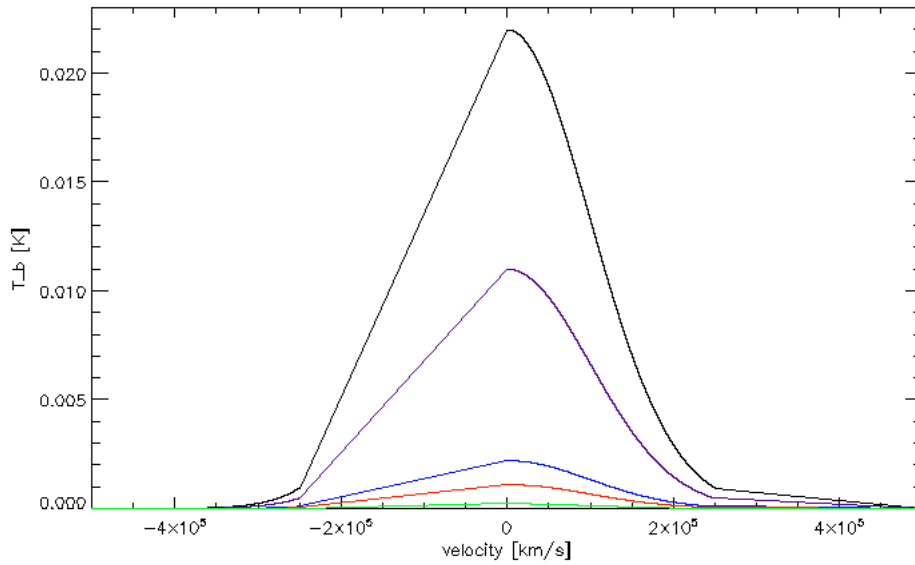


Figure 1: This plot shows the thermally broadened HI line profile sampled at channel widths of 0.5 km/s. The brightness temperature is plotted as a function of velocity, and serves as a representation of the intensity. Each of the five profiles represents a different column density, in units of 10^{21} cm^{-3} . From the top down: $N=0.1$ (black), $N=0.5$ (purple), $N=1.0$ (blue), $N=5.0$ (red), and $N=10$ (green).

1.2 Part (b)

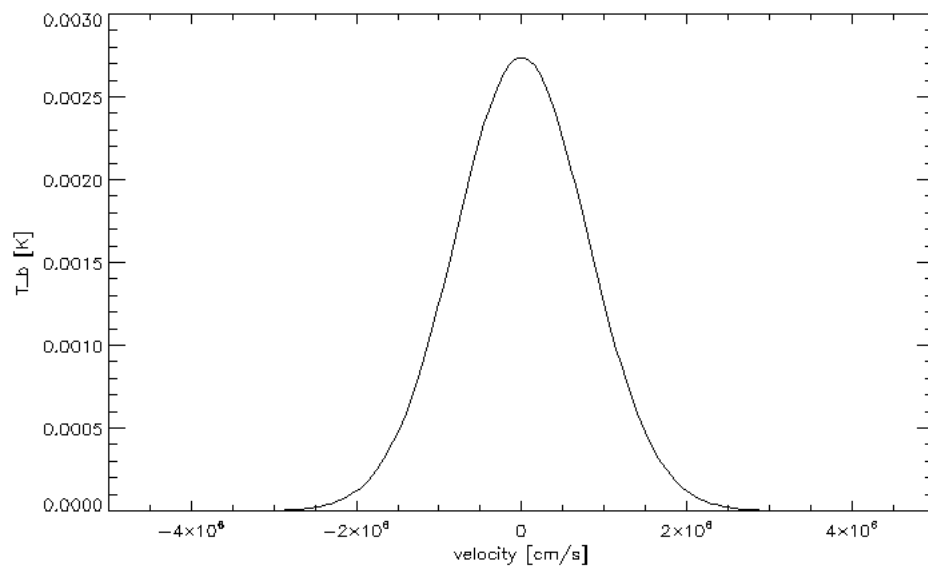


Figure 2: This plot shows a single H I line profile at a column density of $N = 10^{21} \text{ cm}^{-2}$