

Balmer line absorption

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Absorption from the $n=2$ level of hydrogen is not common, but we may be seeing examples both locally and in the first galaxies. What these galaxies have in common is that they are extreme, both in their emission line ratios and in their compactness.

Additionally, in the realistic case of a gas that is optically thick to $\text{Ly}\alpha$, $\text{H}\alpha$ effectively becomes resonant and the geometry of the gas is important.

I am interested in using Cloudy to model these conditions, including non standard gas geometries.

With high Balmer and Lyman optical depth

