

## Evidence for a multiphase, inhomogeneous interstellar medium in damped Ly $\alpha$ systems.

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**ABSTRACT.** The large optical depth in absorption of the Ly $\alpha$  line in damped Ly $\alpha$  systems implies that the *emission* line produced by HII regions is very broad, since the number of diffusions is very large. The emission lines observed in D Ly $\alpha$  systems are narrow, a fact that can only be explained if the emission comes from the outer layers alone, or if the interstellar medium is clumpy and multiphase. We show how discrete, cold HI clouds embedded in a hot, fully ionised phase, produce narrow lines. This might provide evidence for a SNR-dominated ISM at high redshift, in agreement with the observed metallicity and chemical evolution models. Other high redshift galaxies also offer evidence for such a multiphase, inhomogeneous ISM.