

## 1 Vapor pressure equation

Consider a phase transformation between either solid or liquid and gas. Assume that the volume of the gas is *way* bigger than that of the liquid or solid, such that  $\Delta V \approx V_g$ . Furthermore, assume that the ideal gas law applies to the gas phase.

**Note: this problem is solved in the textbook, in the section on the Clausius-Clapeyron equation.**

- (a) Solve for  $\frac{dp}{dT}$  in terms of the pressure of the vapor and the latent heat  $L$  and the temperature.
- (b) Assume further that the latent heat is roughly independent of temperature. Integrate to find the vapor pressure itself as a function of temperature (and of course, the latent heat).