The internal energy of an ideal gas is described by the equation:

$$U(p,T) = \left(\frac{\#dof}{2}\right) NkT$$

The surfaces represent the internal energy of water vapor:

- The *blue* surface shows the internal energy as a function of temperature and pressure, $U(T,p)$, with volume and entropy contours etched into the surface.
- The *purple* surface shows the internal energy as a function of volume and entropy, $U(S,V)$, with pressure and temperatures contours etched into the surface.

By examining the plastic surfaces, how can you tell if an ideal gas model is a good model for water vapor?