

## The ideal gas

• Explain how an ideal gas differs from a lattice gas

• How do the particles that make up an ideal gas interact.

• Give an expression for the Hamiltonian for a system of N ideal gas atoms

• Describe the set of microstates than an ideal gas can occupy



## The ideal gas

• Give an expression for the partition function of a single gas atom and explain how you arrived at this expression

• Explain why Plancks constant appears in the expression for the partition function for an ideal gas

• Explain Gibbs paradox and how this problem is resolved in practise

• Explain how the well-known equation of state for the ideal gas is derived by taking suitable derivatives of the partition function