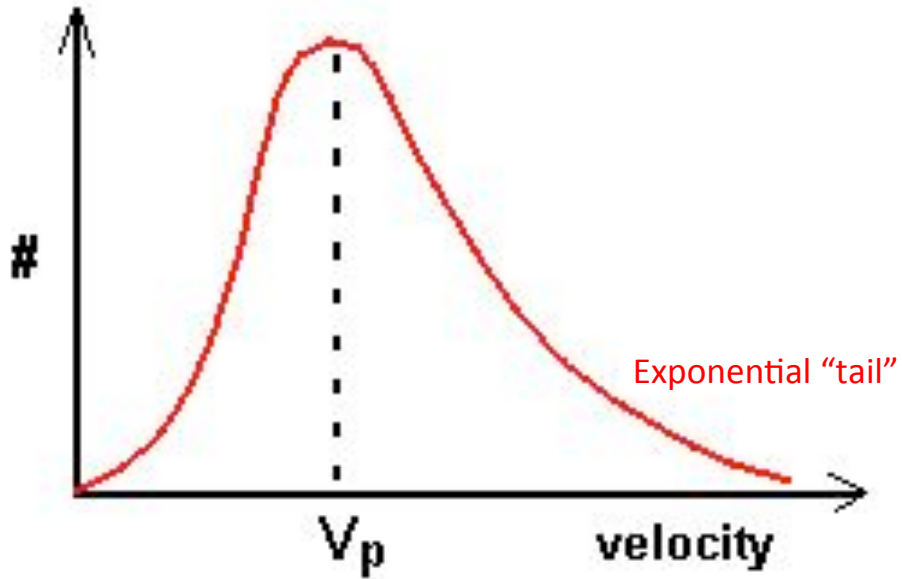
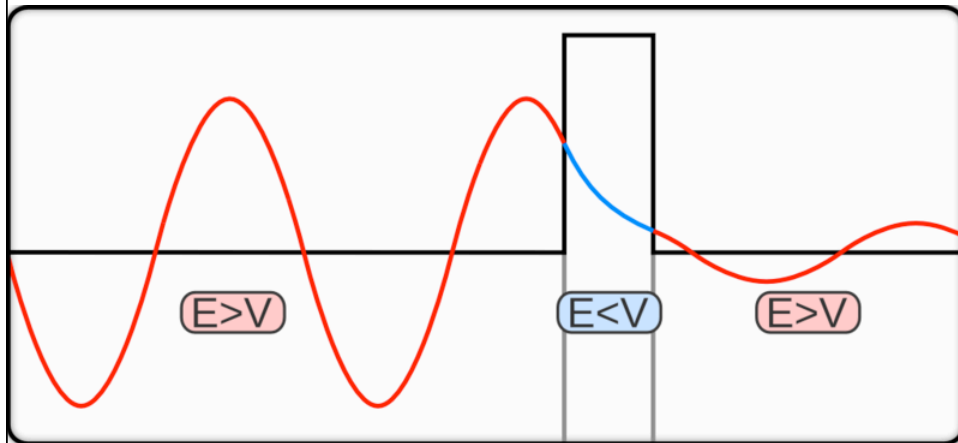


Maxwell-Boltzmann Distribution of Speeds (or Energies)

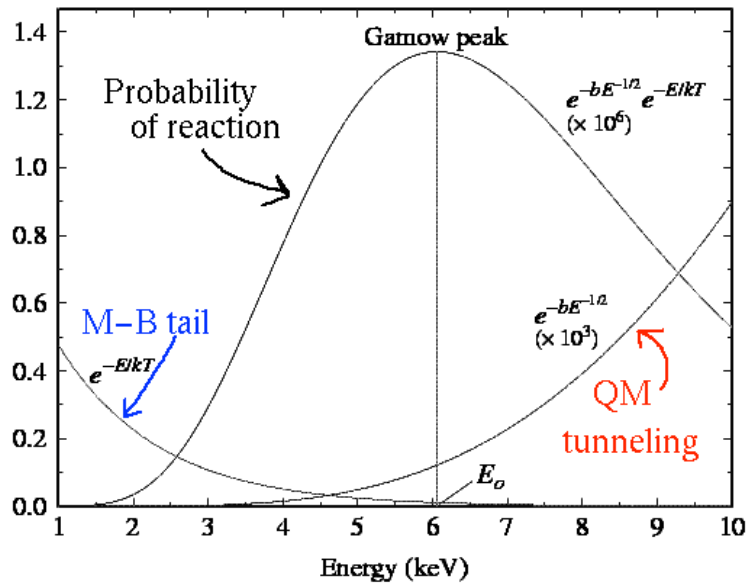


Quantum Mechanics – Tunneling!

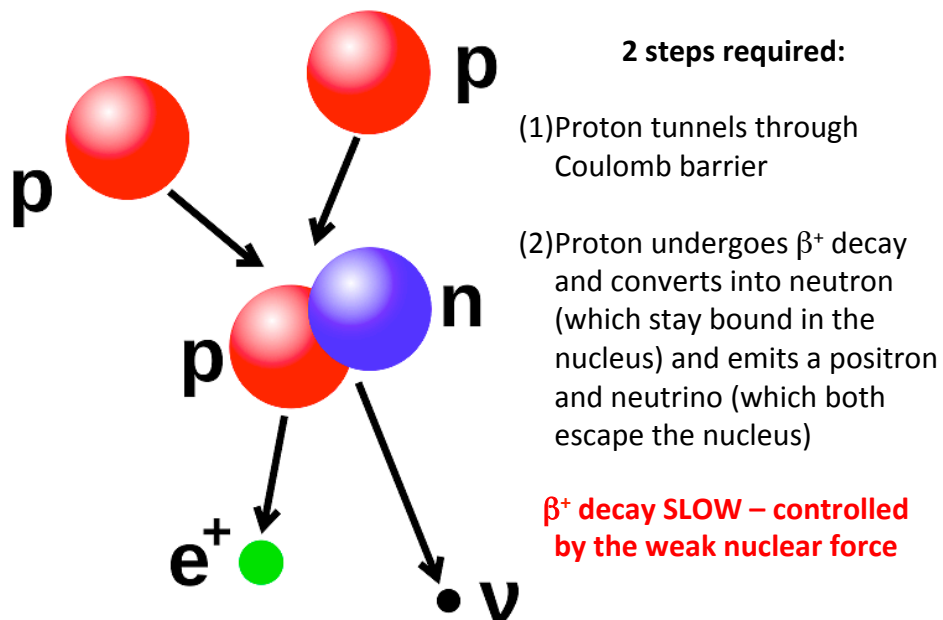


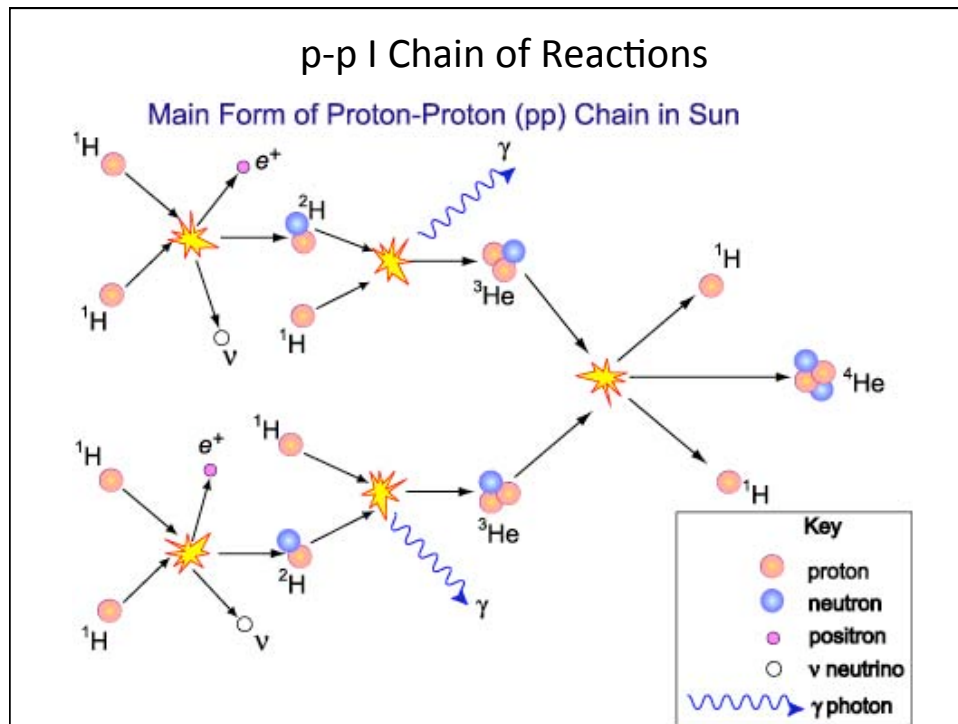
Quantum Mechanics: Particles are described by waves and the probability of finding the particle at a position is given by the square of the amplitude of the wavefunction. Solution to Schrodingers Equation indicates that a wavefunction amplitude will exponentially decay across a potential barrier.

Quantum Mechanics – Tunneling!

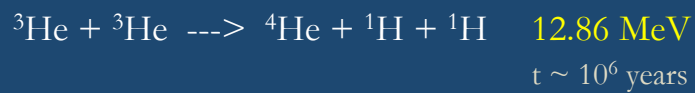
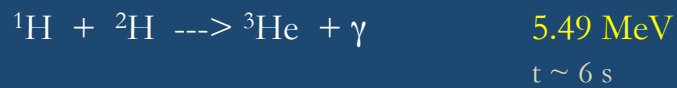
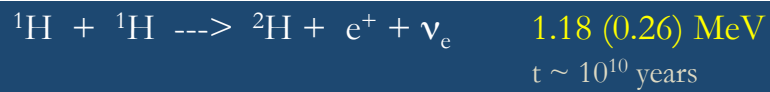


First step of the “p-p Chain” of reactions





p-p I Chain of Reactions



$$\Delta E_{\text{photonic}} = 2 \cdot 1.18 + 2 \cdot 5.49 + 12.86 = 26.2 \text{ MeV}$$

$$\Delta E_{\text{neutrino}} = 2 \cdot 0.26 = 0.52 \text{ MeV}$$