

Phy 410

Quiz #8, March 26, 2010

Write down the expression for quantum concentration n_Q associated with particles of mass M at temperature τ .

If for electrons at room temperature $T=300\text{K}$, $n_Q = 1.27 \times 10^{25} \frac{1}{\text{m}^3}$ then what is n_Q at $T=3\text{K}$ and at $T=30,000\text{K}$.

Is n_Q larger or smaller for ^3He atoms (which are fermions) than that for electrons at the same temperature?