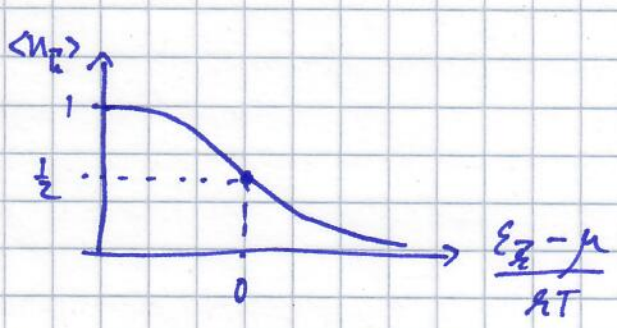
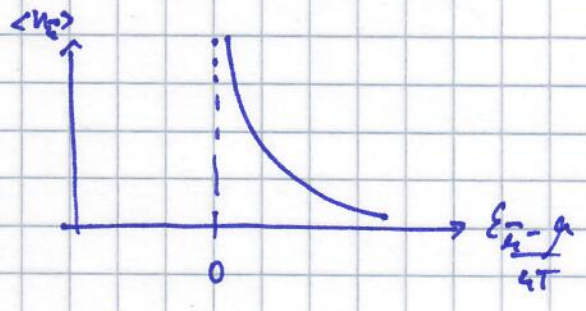
Key points 04/04 lecture

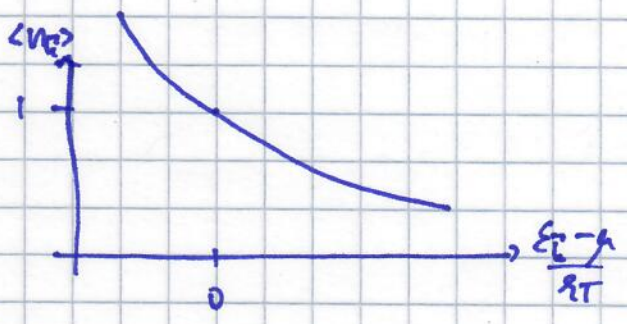
Fermi-Dirac distribution:



Bose-Einstein distribution.



Maxwell-Boltzmann distribution:



large $\frac{\varepsilon_{\vec{k}} - \mu}{kT}$ limit:

all three coincide

Mean-square fluctuations:

$$\frac{\langle n_{\vec{k}}^2 \rangle - \langle n_{\vec{k}} \rangle^2}{\langle n_{\vec{k}} \rangle^2} = \frac{1}{\langle n_{\vec{k}} \rangle} - a$$

"normal" or "particle"

"wave"

$a = -1$ Bosons
$a = 1$ fermions
$a = 0$ Boltzman