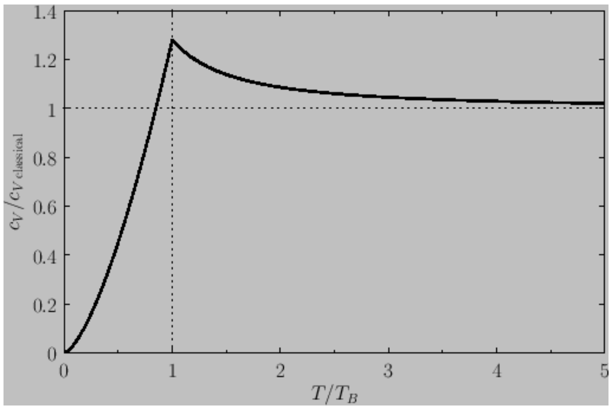
Coexistence region ($\mu=0$), $T<T_0$

$$U=\frac{3}{2}\frac{\gamma V}{\beta\lambda^3}g_{5/2}(1)$$ intern energy

$$N_e=\frac{\gamma V}{\lambda^3}g_{3/2}(1)$$

$$C_V=\frac{1}{N}\left(\frac{\partial U}{\partial T}\right)_{V,N}=\frac{15}{4}\frac{\gamma V k_B}{\lambda^3 N}g_{5/2}(1)$$
$$=c\left(\frac{V}{N}\right)T^{3/2}$$



if $\mu\to 0$ and $V\to\infty$

$$\frac{1}{V}\frac{z}{1-z}\to\frac{1}{V}\frac{1}{1-z}\to\frac{N_0}{V}$$

$$\frac{1}{V}\ln(1-z)\to 0$$

then,

$$p=\frac{1}{\beta V}\ln(\Xi(\beta,V,z))\to\gamma V\int_0^\infty \varepsilon^{1/2}\ln\left(1+\exp(-\beta\varepsilon)\right)d\varepsilon$$
$$=\frac{\gamma}{\beta\lambda^3}g_{5/2}(1)$$

$p\to 0$ if $T\to 0$ Different from Fermi!

$$S=-\left(\frac{\partial\Phi}{\partial T}\right)_{V,\mu}=V\left(\frac{\partial P}{\partial T}\right)_{\mu}$$

$$S(T,V,\mu=0)=V\left(\frac{\partial P}{\partial T}\right)_{\mu=0}=\frac{5k_B\gamma V}{2\lambda^3}g_{5/2}(1)$$