

Callen

$$2.3-2, \quad n = \left(\frac{\theta}{R}\right) S^2 e^{-v^2/v_0^2} \quad \text{in entropy representation.}$$

$$\frac{R}{\theta} e^{v^2/v_0^2} \frac{1}{n} = S^2$$

$$\Rightarrow \quad S = \left(\frac{R}{\theta}\right)^{1/2} e^{v^2/2v_0^2} n^{1/2}$$