

$$T_{\text{eff}} = T_0 \left(1 + \frac{\alpha}{2} \right) \approx T_0 \left(1 + \frac{\alpha}{2} \right), \quad \text{where } \alpha = \frac{1}{2} \left(\frac{\partial \ln T}{\partial \ln \rho} \right)_P.$$