

ex 8494

$$\eta_b = n m v_T A = n \sqrt{m T_B} A$$

$$V_b = 2 \eta_b T_B$$



From Langevin $x_\omega^2 = \frac{1}{|\chi(\omega)|^2} F_\omega^2$

$$\Rightarrow \tilde{C}_{xx}(\omega \sim 0) = \frac{1}{\alpha^2} V_b$$

$\alpha =$ spring constant

Interaction: $-\xi(t) x$

Response: $\langle x \rangle = \frac{1}{\alpha} \xi - \tilde{\eta} \dot{\xi}$

FDP: $\tilde{\eta} = \frac{1}{2 T_A} \tilde{C}_{xx}(\omega \sim 0) = \frac{\eta_b T_B}{\alpha^2 T_A}$

$$\tilde{\eta} = \frac{n \sqrt{m T_B} T_B}{\alpha^2 T_A} A$$