

Errata

Richard Tjörnhammar:

Classical and Quantum Descriptions of Proteins, Lipids and Membranes

Eq. 2.16 on page 19 should read

$$E_{ZPE} = \frac{hc}{2} \int_0^\infty \omega n(\omega) d\omega$$

$$\approx \frac{hc}{2} \int_0^\infty \omega \int_{-\infty}^\infty e^{i\omega t} \langle \mathbf{v}_i(t) \mathbf{v}_i(0) \rangle / \langle v_i^2 \rangle dt d\omega \quad (1)$$

$$\approx \frac{hc}{2} \int_0^\infty \omega (1 - e^{-\hbar\beta\omega}) \int_{-\infty}^\infty e^{i\omega t} \langle \boldsymbol{\mu}_i(t) \boldsymbol{\mu}_i(0) \rangle / \langle \mu_i^2 \rangle dt d\omega \quad (2)$$

the difference between the expressions is $\approx 5\%$ for bulk water.

Section 4.1 should have boundary $\psi_I = \frac{\xi_I^2}{\xi_{II}^2 + \xi_I^2}$, $\psi_{II} = \frac{\xi_{II}^2}{\xi_{II}^2 + \xi_I^2}$ yielding:

$$\gamma_L = \sqrt{2} \Delta h^2 \frac{\gamma_I \xi_I + \gamma_{II} \xi_{II}}{\xi_{II}^2 + \xi_I^2} \quad (3)$$

Which in turn means $\gamma_L \approx 1.8$ pN for DOPC/Cholesterol inclusion in DMPC.