## Supporting information for: On the Equivalence of Schemes for Simulating Bilayers at Constant Surface Tension

Jocelyn M. Rodgers<sup>\*,†</sup> and Berend Smit<sup>\*,‡,¶,§</sup>

Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720,
USA, Department of Chemical Engineering, University of California, Berkeley, 101B Gilman
Hall, Berkeley, CA 94720-1462, USA, Materials Science Division, Lawrence Berkeley National
Laboratory, Berkeley, CA 94720, USA, and Department of Chemistry, University of California,
Berkeley, 101B Gilman Hall, Berkeley, CA 94720-1462, USA

E-mail: jrodgers78@gmail.com; berend-smit@berkeley.edu

## **1** Full Histogram Data for *N*<sub>lip</sub>=256

Figures S1 to S3 display both the probability density profiles as well as the deviations from the best estimate for  $V_{\text{lip}}$ ,  $A_{\text{lip}}$ , and  $L_{\perp}$  with  $N_{\text{lip}} = 256$  and  $\gamma = 0.0$ . Figures S4 to S6 display the same data for  $N_{\text{lip}} = 256$  and  $\gamma = 2.0$ .

As discussed in Section 5 of the main paper,<sup>1</sup> the variation between all sampled histograms are reasonably within the calculated error bars.

<sup>\*</sup>To whom correspondence should be addressed

<sup>&</sup>lt;sup>†</sup>Lawrence Berkeley National Laboratory, Physical Biosciences

<sup>&</sup>lt;sup>‡</sup>UC Berkeley, Chemical Engineering

<sup>&</sup>lt;sup>¶</sup>Lawrence Berkeley National Laboratory, Materials Science

<sup>&</sup>lt;sup>§</sup>UC Berkeley, Chemistry



Figure S1:  $V_{\text{lip}}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 0.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.



Figure S2:  $A_{\text{lip}}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 0.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.



Figure S3:  $L_{\perp}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 0.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.



Figure S4:  $V_{\text{lip}}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 2.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.



Figure S5:  $A_{\text{lip}}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 2.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.



Figure S6:  $L_{\perp}$  probability density and deviations for  $N_{\text{lip}} = 256$  and  $\gamma = 2.0$ . Displayed data symbols are staggered across MC move sets and only shown every 12 points for readability.

## References

(1) Rodgers, J. M.; Smit, B. J. Chem. Theory Comput. 2011, submitted.