PHYSICAL REVIEW E **67**, 039902(E) (2003)

Erratum: Stiffening of fluid membranes due to thermal undulations: Density-matrix renormalization-group study [Phys. Rev. E 66, 061907 (2002)]

Yoshihiro Nishiyama

(Received 8 January 2003; published 12 March 2003)

DOI: 10.1103/PhysRevE.67.039902 PACS number(s): 87.16.Dg, 87.16.Ac, 05.10.Cc, 99.10.Cd

As noted in Sec. II B, there are a number of sources of numerical errors that may affect the precision of the numerical derivatives for Eq. (16). We found that a refined treatment [1], the so-called Richardson's deferred approach reduces the amount of errors. The deviations are not so important for almost all data. However, they are rather problematic for Fig. 9 (the case where we had accepted the local tilt angle for the statistical measure). The revised figure shows that the transformation coefficient $\partial\kappa'/\partial\kappa$ is even closer to the neutral value $\partial\kappa'/\partial\kappa=1$, confirming our former speculation that the membrane shape would stay almost scale invariant under that statistical measure. In that case, therefore, it may require further investigation to judge whether the membrane stiffening occurs for macroscopic length scales.

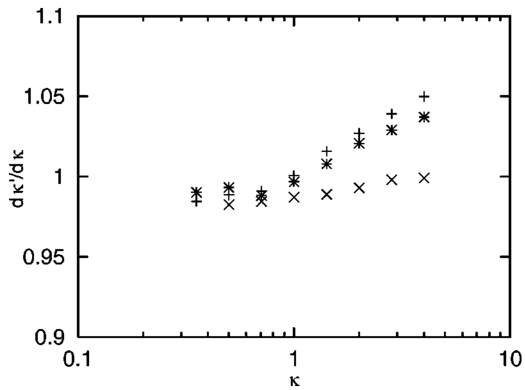

FIG. 9. Transformation coefficient $\partial\kappa'/\partial\kappa$ is plotted for bare rigidity κ. We have accepted the local tilt angle for the statistical measure. The simulation parameters for each symbol are (+) $m=10$, $N_s=9$, and $R=0.7$; (×) $m=12$, $N_s=7$, and $R=0.7$; and (*) $m=11$, $N_s=8$, and $R=0.7$.

[1] W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery, *Numerical Recipes in FORTRAN* (Cambridge University Press, Cambridge, 1992).

