Calculation of the melting point through free-energy curves was done in ref. 1 (fig. 4) using the same potential file as provided here (as can be seen in ref. 2). The authors quote $T_{\mathrm{m}} = (276.13 \pm 0.03)\,\mathrm{K}$, which is consistent with the value of $275 \pm 1\,\mathrm{K}$ in the original paper for the potential [3].

Table 1: All densities quoted are in units of $\mathrm{g \cdot cm^{-3}}$. Error bars are standard error of the mean.

Source	$\rho_{\mathrm{liquid}}(274.6\,\mathrm{K})$	$\rho_{\mathrm{liquid}}(298\,\mathrm{K})$	$\rho_{\mathrm{liquid}}(250\,\mathrm{K})$	$\rho_{\mathrm{ice}}(274.6\,\mathrm{K})$
Original paper [3]	1.001	0.997	1.003	0.978
Our calculations	1.002 ± 0.001	0.998 ± 0.001	1.002 ± 0.001	0.979 ± 0.001

References

[1] R. P. Leite and M. de Koning, "Nonequilibrium free-energy calculations of fluids using lammps," *Computational Materials Science*, vol. 159, pp. 316–326, 2019.

[2] https://github.com/plrodolfo/FluidFreeEnergyforLAMMPS.

[3] V. Molinero and E. B. Moore, "Water modeled as an intermediate element between carbon and silicon," *The Journal of Physical Chemistry B*, vol. 113, pp. 4008–4016, 2008.