

Editor comments have been duplicated here in black. Our response to the comment is in blue, and specific changes to the manuscript have been **bolded**.

EC

1. Mean Absolute Scaled Error: to my knowledge, this name is typically used for a slightly different error metric, i.e. when comparing different simulations to some (naive) benchmark. I wonder if it would be better to just speak of, e.g., a MAE ratio here, but please correct me if the MASE is commonly used as the authors use it.

We have replaced every instance of MASE with MAE ratio in the revised manuscript

2. I would appreciate if the names of the nonionic surfactants given in Figs. 3 and 5 would be spelled out somewhere in the manuscript or SI so the reader has this information without consulting Bain et al. (2023). This could be done via their names, structures, or just a description of the compound classes.

We have added the following text to the caption of Fig. 3 to clarify the identity of the nonionic surfactants.

(CmEn surfactants are linear poly(oxyethylene) alkyl ethers, Tween20 is a commercial surfactant also known as polyoxyethylene (20) sorbitan monolaurate and OTG is octyl- β -D-thioglucopyranoside.)

3. Side comment on the interplay of Figs. 4 and 5: I would find it instructive if the result of Fig. 5, i.e. minimum surface tension for 1 and 0.1 μm particles, would be represented with a line in Fig. 4, too.

To clarify the interplay between figures 4 and 5 we have added predictions of surface tension and fractional surface coverage for 1.0 and 0.1 μm to Fig. 4. We have revised some of the text in the last paragraph of page 10 and first paragraph on page 11 to discuss these new prediction lines.

