## Metric between buckling structures and elastic properties in physisorbed polymer-tethered lipid monolayers

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Figure S1. (A) Histogram of heights determined at each pixel for 10 mol\% DSPE-PEG monolayer. (B) Cumulative histogram of pixel heights. (B-insert) AFM micrograph of $10 \mathrm{~mol} \%$ DSPE-PEG5000 with bearing area cutoff shown by color: fraction to the left of bearing area cutoff arrow indicated in AFM micrograph in blue; fraction to the right indicated in red.


Figure S2. Analysis of section width determination. A) Typical section width analysis for $10 \%$ DSPE-PEG5000 monolayer. B) AFM micrograph showing location of width determination. Lines between sections $=349 \mathrm{~nm}$. C Histogram of data acquired from $10 \%$ DSPEPEG monolayer. Mean $=350 \mathrm{~nm}$.


Figure S32. SOPC bilayers with 5 (A), 10 (B), 30 (C) and 40 (D) mol\% DSPE-PEG5000. Scale bar $=10 \mu \mathrm{~m}$.

