

Movie captions

Movie1. Active shape oscillations of a single GUV: The movie consists of 200 snapshots or frames, each of which displays a different image of the same GUV as obtained by differential interference contrast (DIC) microscopy. The movie was taken with the pre-defined time interval $\Delta t = 7.61$ s between successive frames and displays the whole series of 200 frames within 20 s, corresponding to about 1500 s or 25 min real time. Apart from a few frames at the beginning and at the end, the movie consists of 26 complete oscillation cycles with an average period of 55.9 s. This movie corresponds to the DIC part of Video_S6 in https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1002%2Fanie.201808750&file=anie201808750-sup-0001-Video_S6.mp4 which is a Supplement to Ref. [4] of the main text.

Movie2. Up-down symmetric and asymmetric dumbbells for fixed volume-to-area ratio $v = 0.670$ and variable spontaneous curvature \bar{m} : The left panel displays the up-down symmetric dumbbells (blue) for $0.99 \leq \bar{m} \leq 2.27$, the right panel the up-down asymmetric ones (red), which are present in the restricted \bar{m} -range with $1.89 \leq \bar{m} < 1.94$. For $\bar{m} = 1.94$, the branch of asymmetric dumbbells has merged with the branch of symmetric ones. Both types of dumbbells are obtained as smooth solutions of the shape equations for axisymmetric shapes. The rotational symmetry axis is parallel to the z -axis as indicated by the broken vertical lines. The second Cartesian coordinate is taken to be the x -axis.