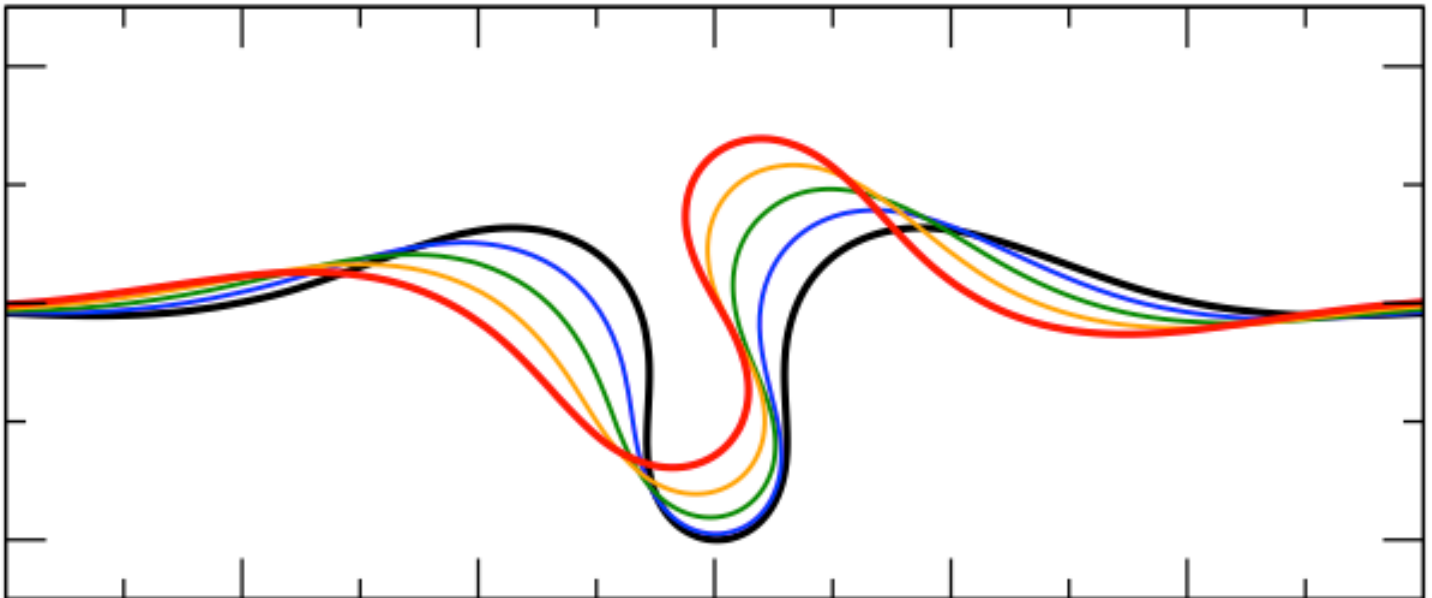
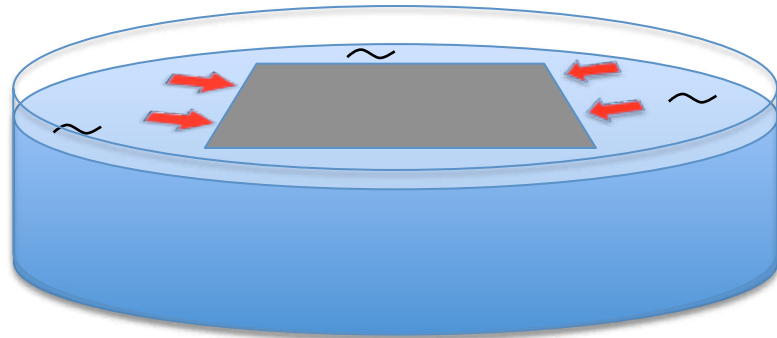


# Compressed floating sheets fold *ambivalently*

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Thin solid coatings on soft substrates wrinkle and fold when compressed. The simplest case is a sheet floating on water (top). Here incipient wrinkles rapidly collapse into localized folds. The shape of these folds is important for using the folded structures e.g. to capture nanoscale objects. A given compression can make a symmetric fold (black curve bottom) or an antisymmetric one (red curve). Our mathematical derivation of the shape revealed a surprising symmetry: one may change the shape continuously from the black to the red curve with no cost of energy: the fold is *ambivalent*.

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