



A folding sheet as a soliton

CAPTION:

Connected pendula at left are swinging in a "breather" mode, a form of soliton. It remains localized in space because of its high swings. Height of the surface under the pendula shows their swing angles. Surface extends to the right to show the time-dependence of the swinging pattern. The diagonal edge is accentuated. Red curve is drawn to have its slope-angle at each point equal to the swing angle along the edge. This curve has the shape of a film floating on a liquid compressed so that it buckles and folds.

Black tie-lines indicate corresponding points on the two curves. Below the red line is a photo of a thin plastic film 6 cm long floating on a trough of water, viewed edge-on, from L Pocivavsek et al, *Science* 16 May 2008: Vol. 320 pp. 912-916 .

For a full description see <http://arxiv.org/abs/1107.5505>, by Haim Diamant and T. A. Witten, *Physical Review Letters* accepted September 2011

