Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information

Formation of high aspect ratio wrinkles and ridges on elastic bilayers with small thickness contrast

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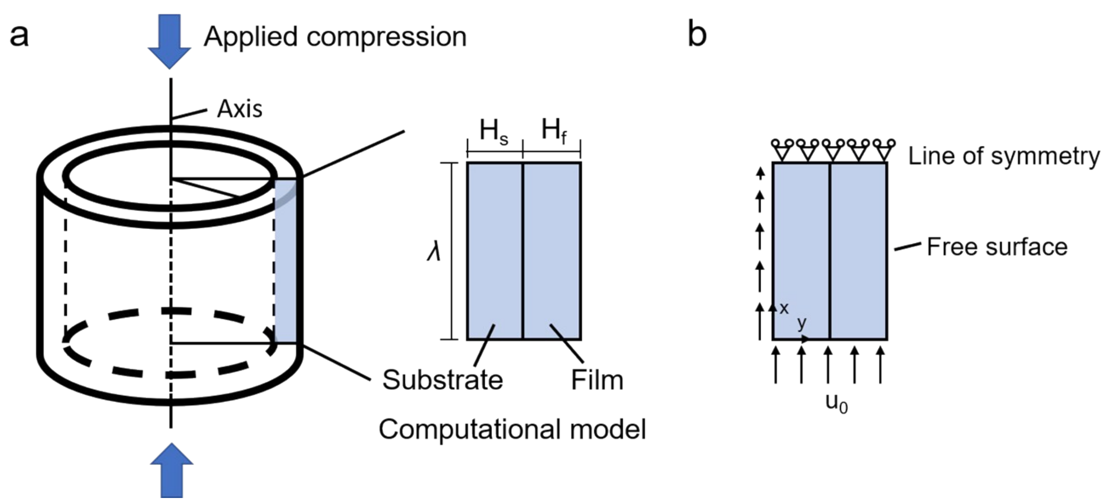

Figure S1. A schematic illustration of the computational model. (a) A thin-wall cylinder is used to model the uniaxial compression. The computational cell is axisymmetric, with an axial length of one wrinkle wavelength. (b) The loading condition of the computational cell. The top boundary is a line of symmetry; the bottom boundary is subjected to an applied displacement u_0; the left boundary is enforced to have uniform horizontal displacement and vertical displacement of u_0x/λ; the right surface is a free surface.

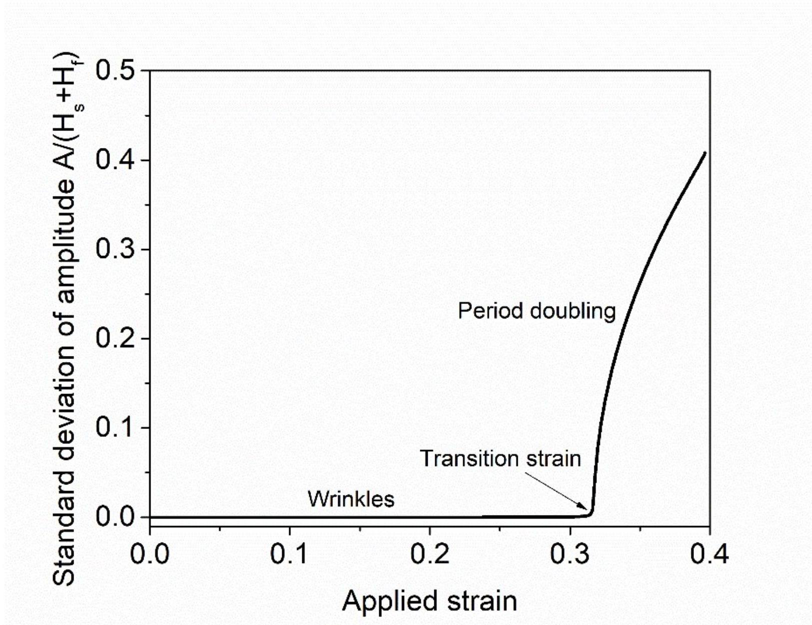

Figure S2. An example showing the determination of the critical strain for secondary bifurcation from simulations. The amplitudes of multiple features are measured at a particular strain and normalized with respect to thickness. The standard deviation of these features is then plotted as a function of applied strain. In the wrinkled state, the amplitudes are very uniform and therefore the standard deviation is close to zero. Upon secondary bifurcation, the wrinkle amplitudes lose their uniformity, leading to a sharp increase in the standard deviation. The point where the standard deviation sharply increases is defined as the critical strain for secondary bifurcation.