

Supplementary materials to
The role of the nucleus for cell mechanics: an elastic phase field approach

Robert Chojowski, Ulrich S. Schwarz, and Falko Ziebert

Supplementary movies

Supplementary movie 1: Failure of a focal adhesion

A cell with nucleus was allowed to spread in a hexagonal adhesion pattern and to contract isotropically until it reached mechanical equilibrium. Subsequently, the most right adhesion spot was removed and the cell evolved towards a new mechanical equilibrium; cf. Fig. 4 of the main manuscript. Parameters as described there.

Supplementary movie 2: Compression experiment for a spherical cell

Compression of a spherical cell of axial symmetry between two plates, cf. Fig. 5 A of the main manuscript. Parameters as described there with $E_N/E_C = 1$.

Supplementary movie 3: Compression experiment for a spherical cell

Compression of a spherical cell of axial symmetry between two plates, cf. Fig. 5 A of the main manuscript. Parameters as described there with $E_N/E_C = 10$.

Supplementary movie 4: Compression experiment for a pancake-shaped cell

Compression of a pancake-shaped cell of axial symmetry between two plates, cf. Fig. 5 D of the main manuscript. Parameters as described there with $E_N/E_C = 1$.

Supplementary movie 5: Compression experiment for a pancake-shaped cell

Compression of a pancake-shaped cell of axial symmetry between two plates, cf. Fig. 5 D of the main manuscript. Parameters as described there with $E_N/E_C = 10$.

Supplementary movie 6: Micropipette aspiration experiment for a spherical cell

A spherical cell is sucked into a micropipette by a pressure $\Delta P/E_C = 0.5$, cf. Fig. 6 A of the main manuscript. Parameters as described there with $E_N/E_C = 10$.