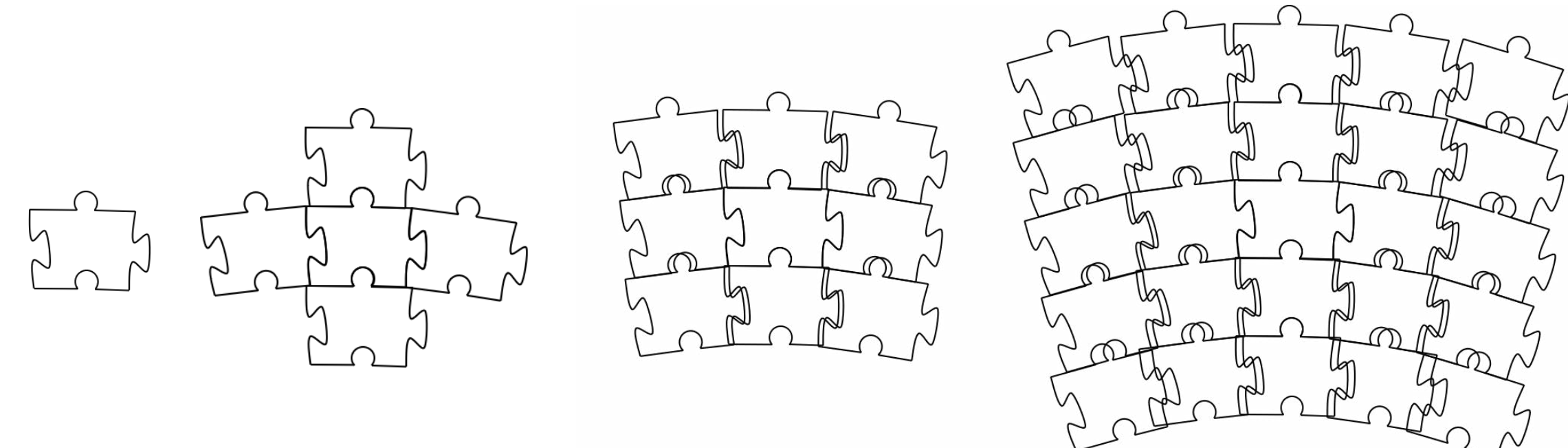
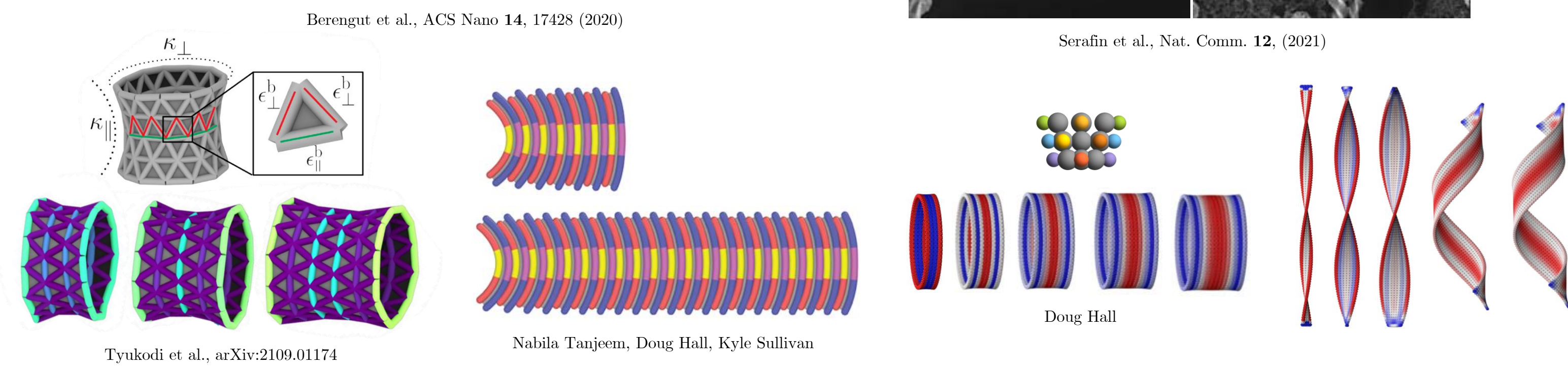
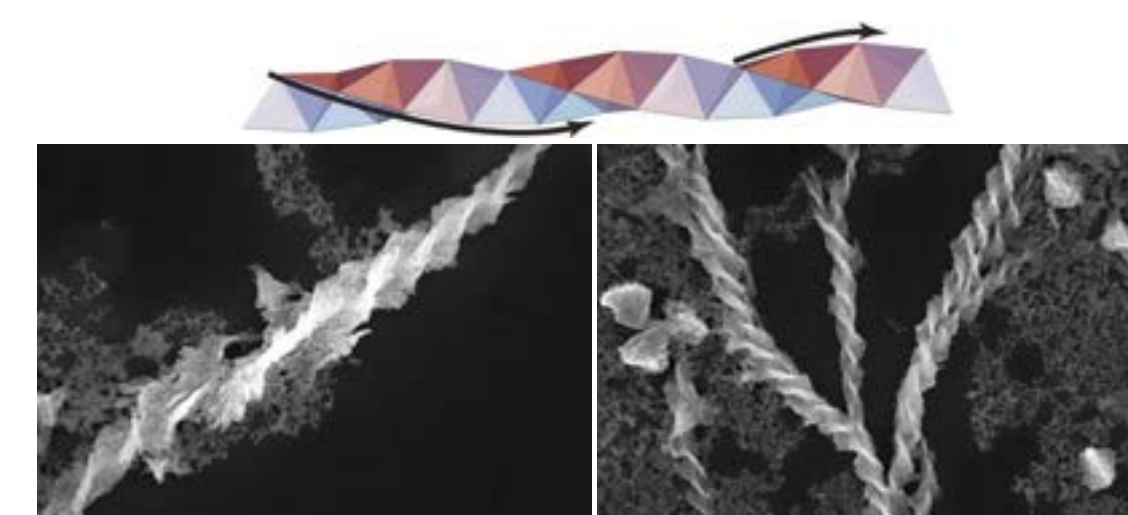
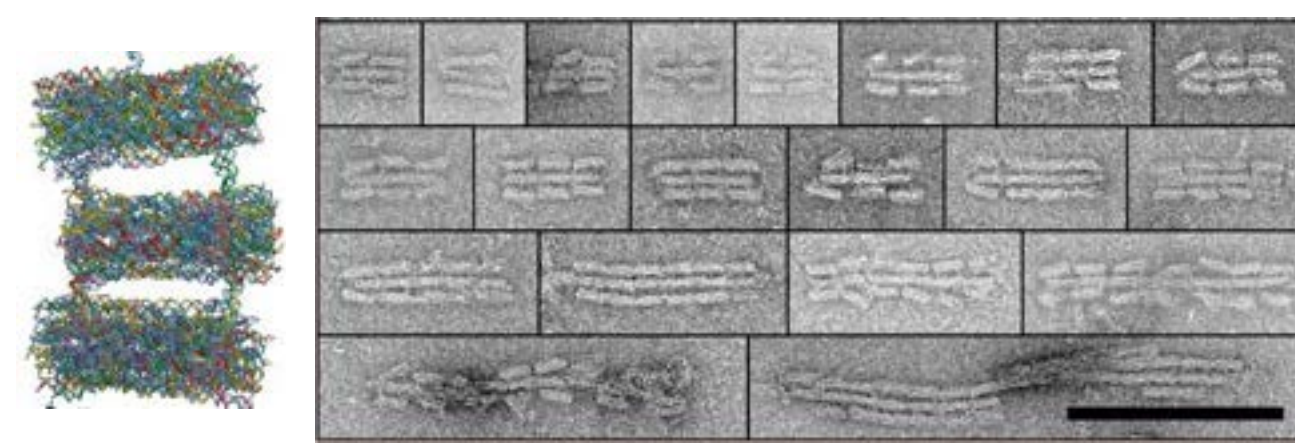


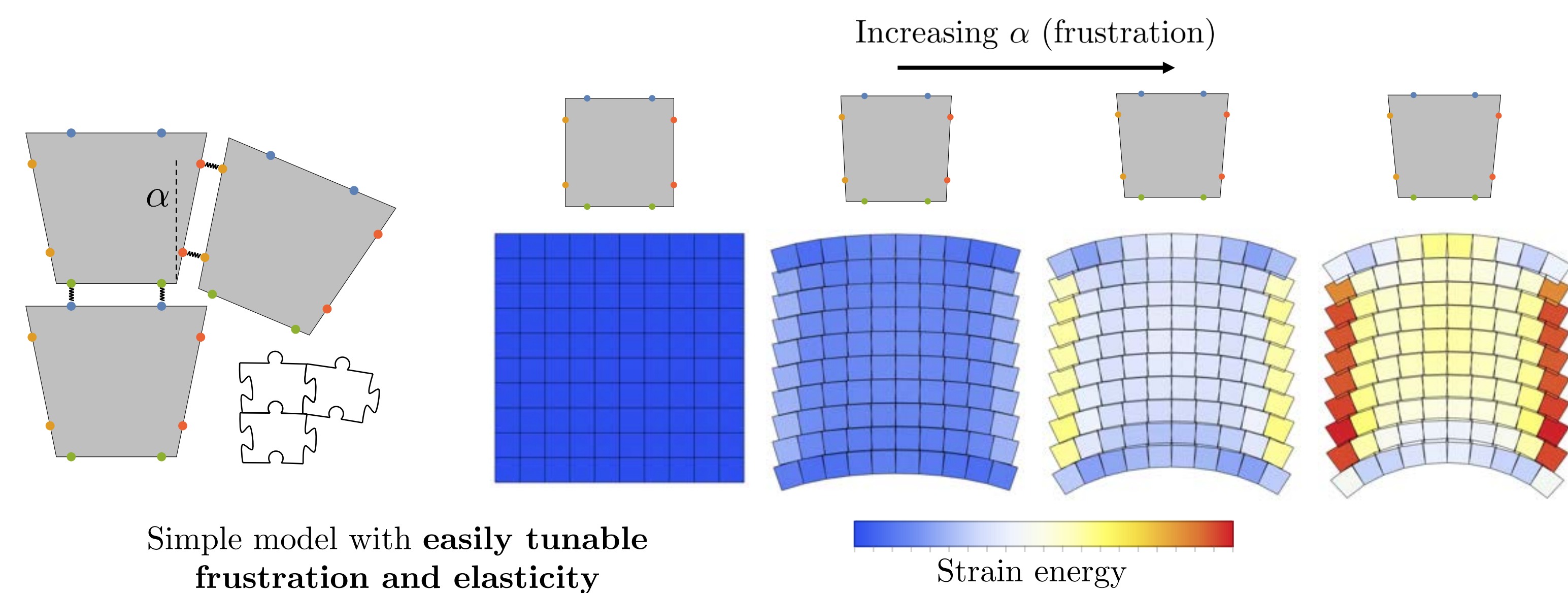
Open-boundary assemblies and geometric frustration



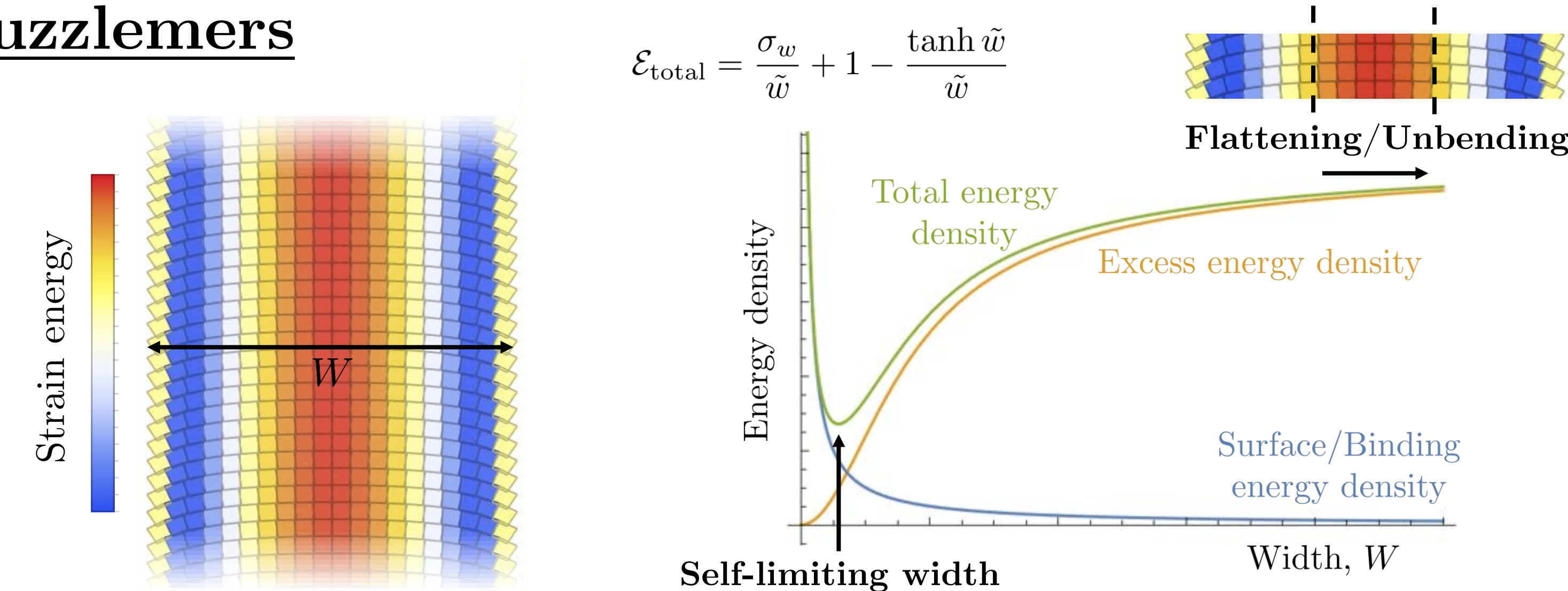
- Particles cannot fit together perfectly on a large scale
- Strain accumulates as the structure deforms to bind new particles to its boundary



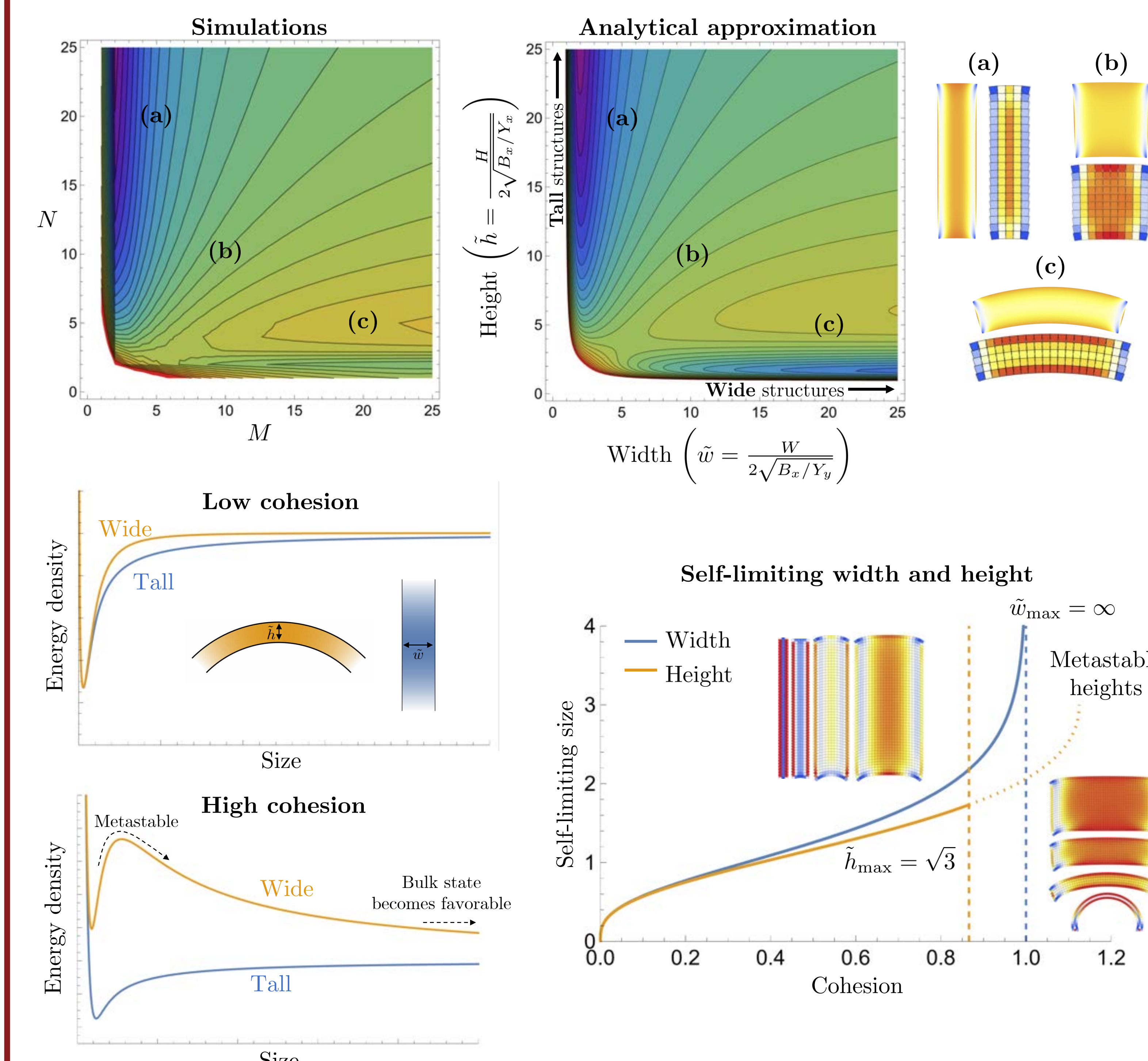
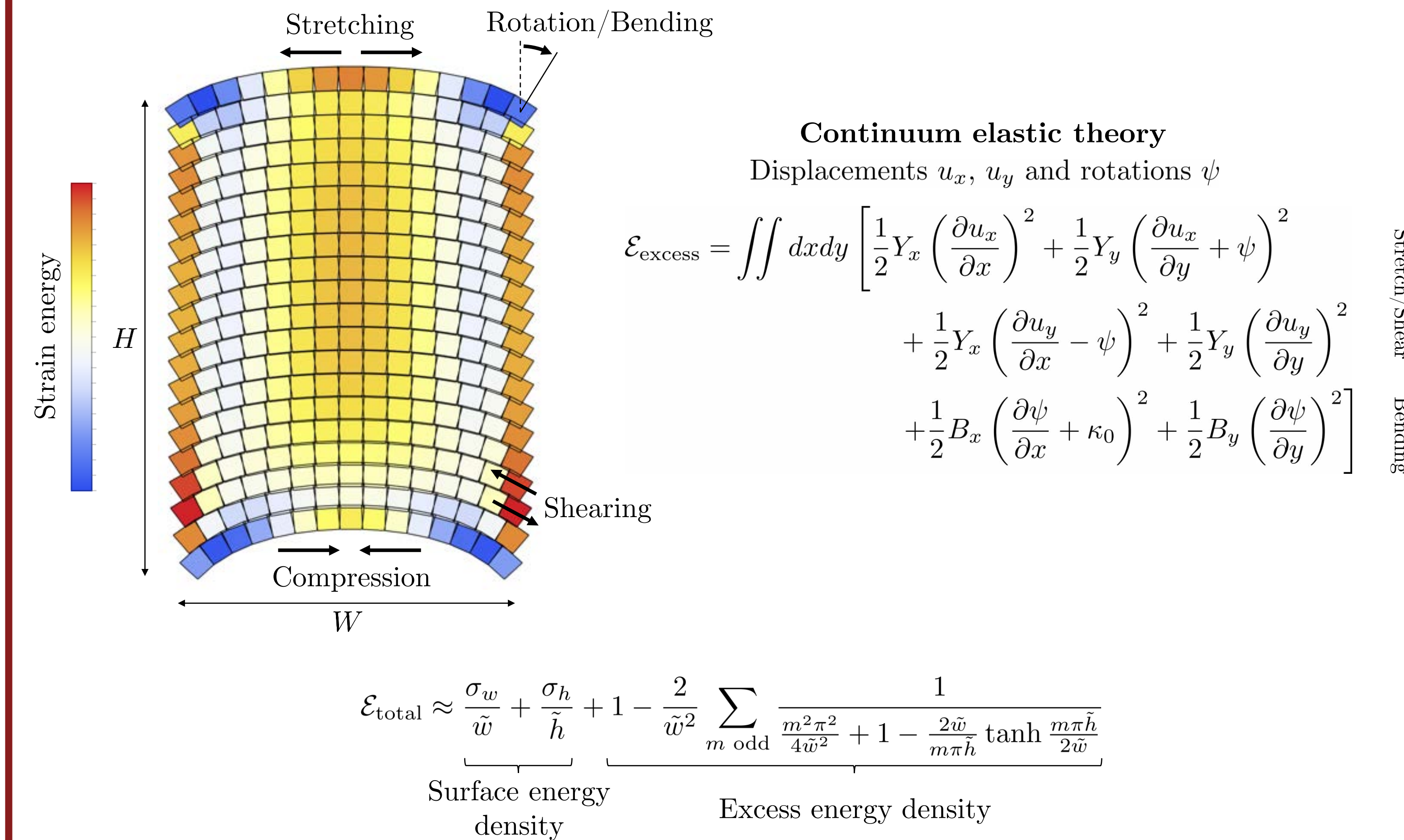
Tuning frustration with trapezoidal puzzlemers



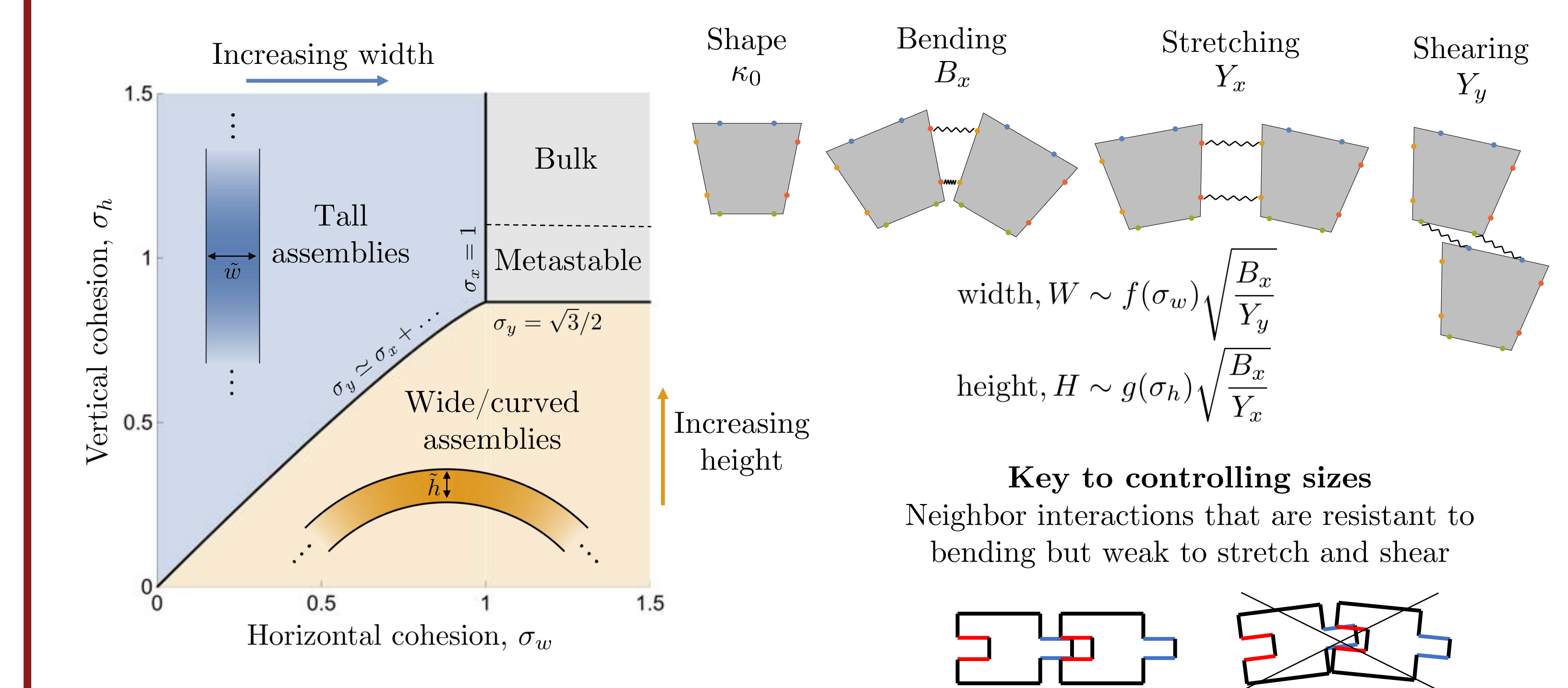
Self-limiting width of infinitely tall assemblies of puzzlemers



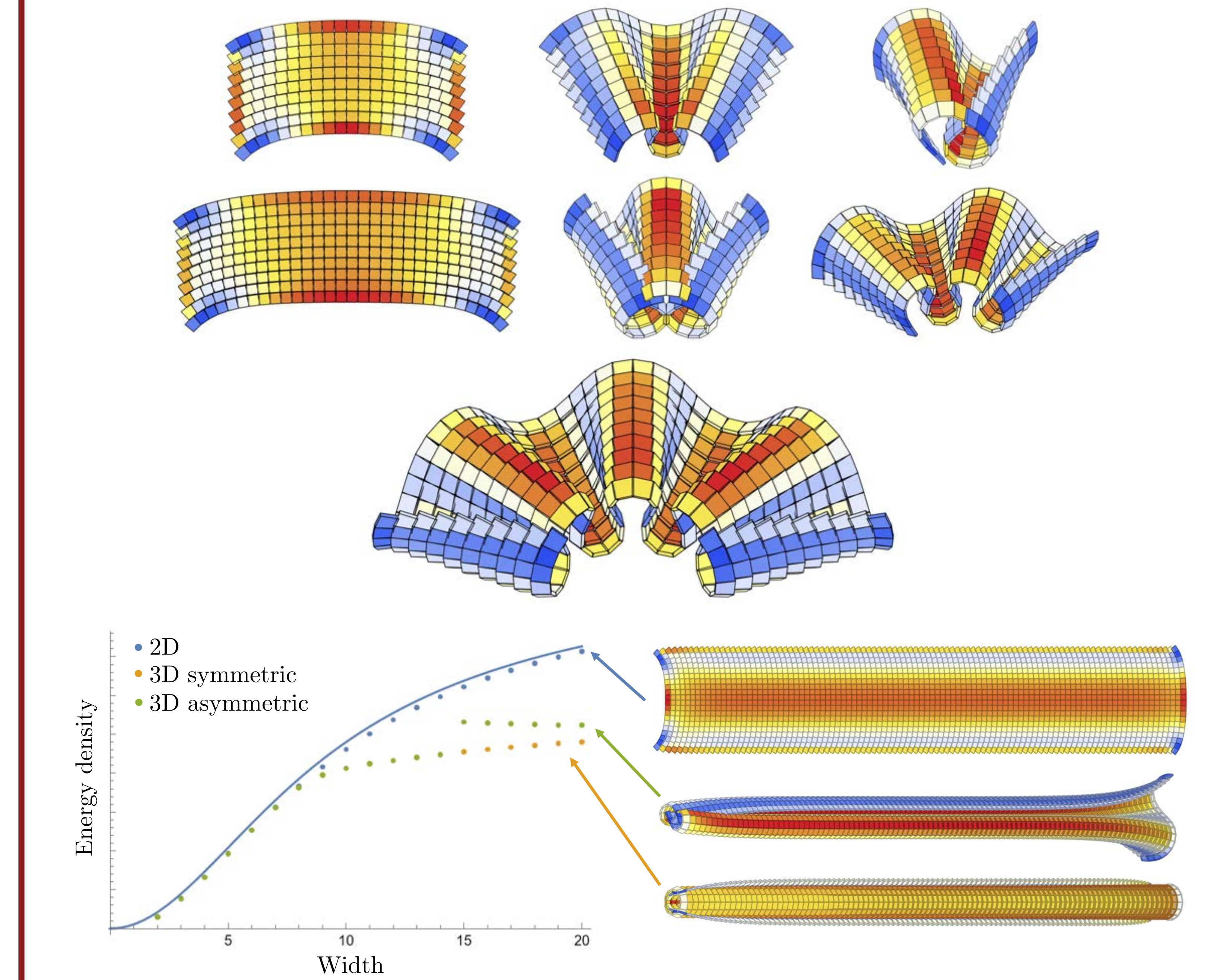
Energetics of finite-sized 2D sheets of puzzlemers



Morphologies and size control of 2D sheets



Escaping frustration: out-of-plane deformations



Challenges

- Self-assembly of a polydisperse mixture of puzzlemers
- Modes of escaping frustration (e.g. buckling, defects)
- Effect of temperature (thermodynamics of GFAs)
- Experimental realization of trapezoidal puzzlemers with DNA origami colloids
- Active self-assembly (IRG 1 + IRG 2)