

# A microstructural approach for modeling compression effects of porous foams

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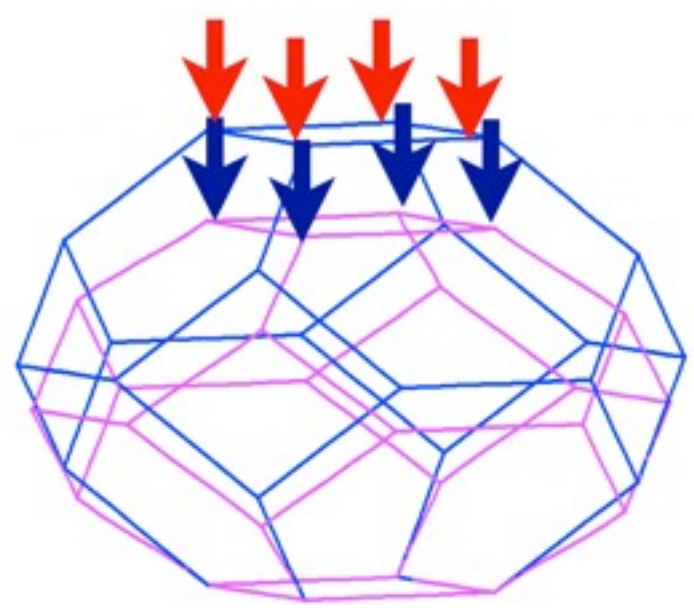
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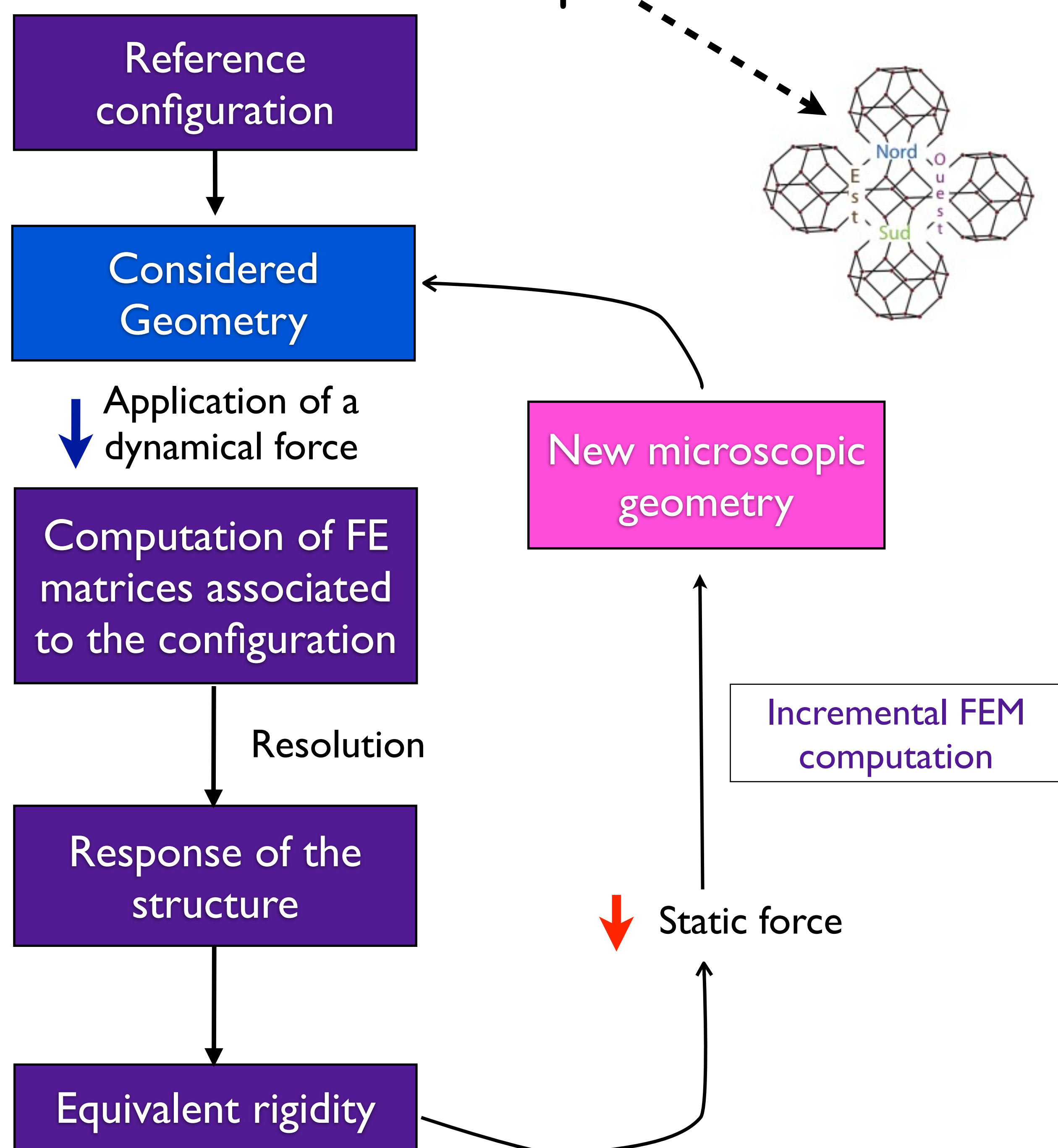
## Objective

To propose a numerical approach to model bending effects of cellular foams

### Microstructural Finite-Element Model

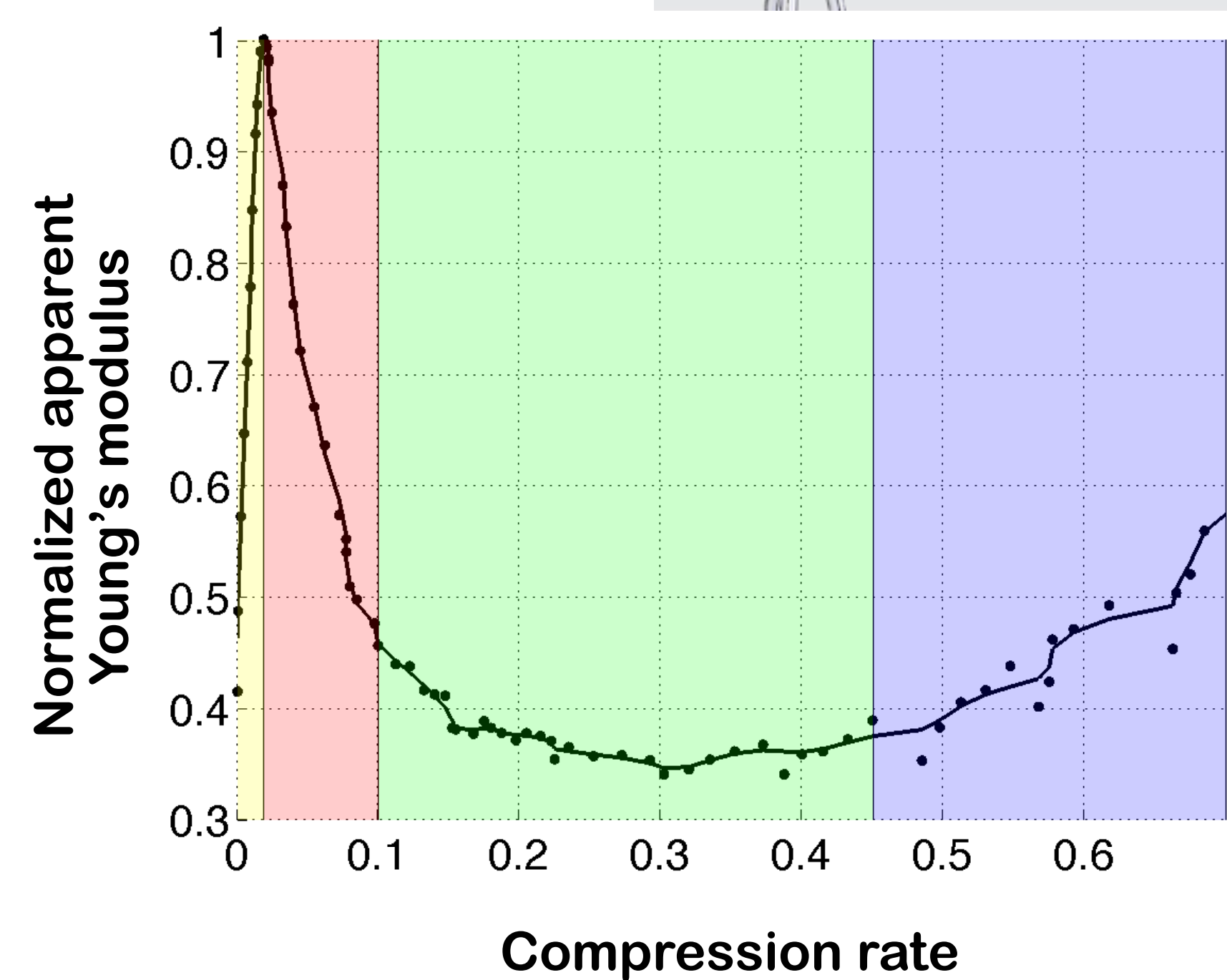
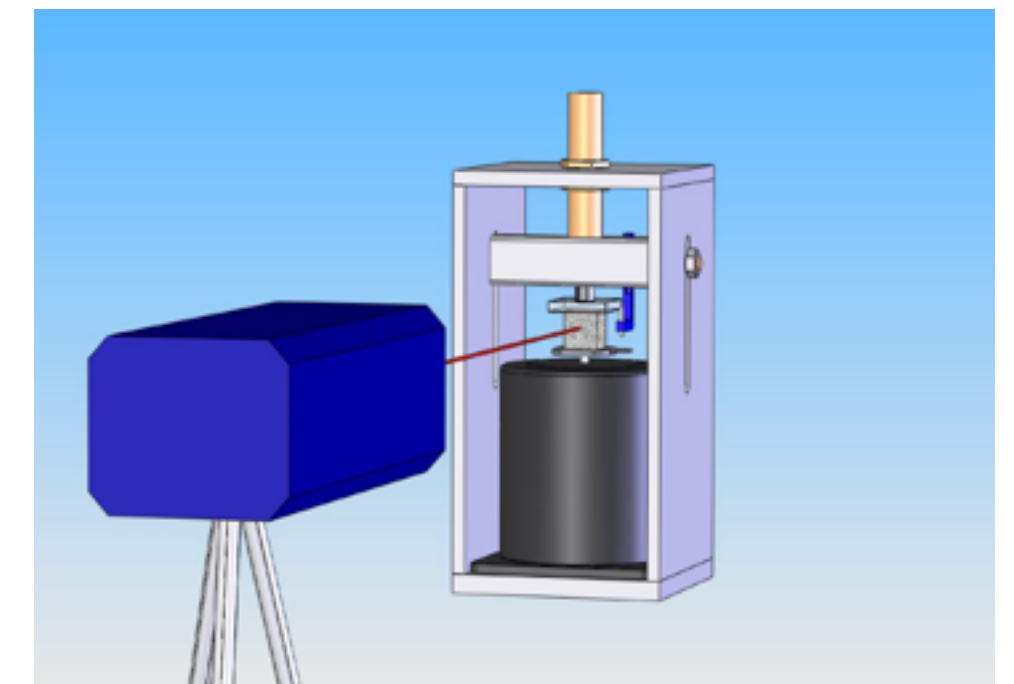


- ✓ Kelvin tetrakaidecahedron
- ✓ Each edge is subdivided in beam elements (6 dofs)
- ✓ 2D periodization of the cell to model a map



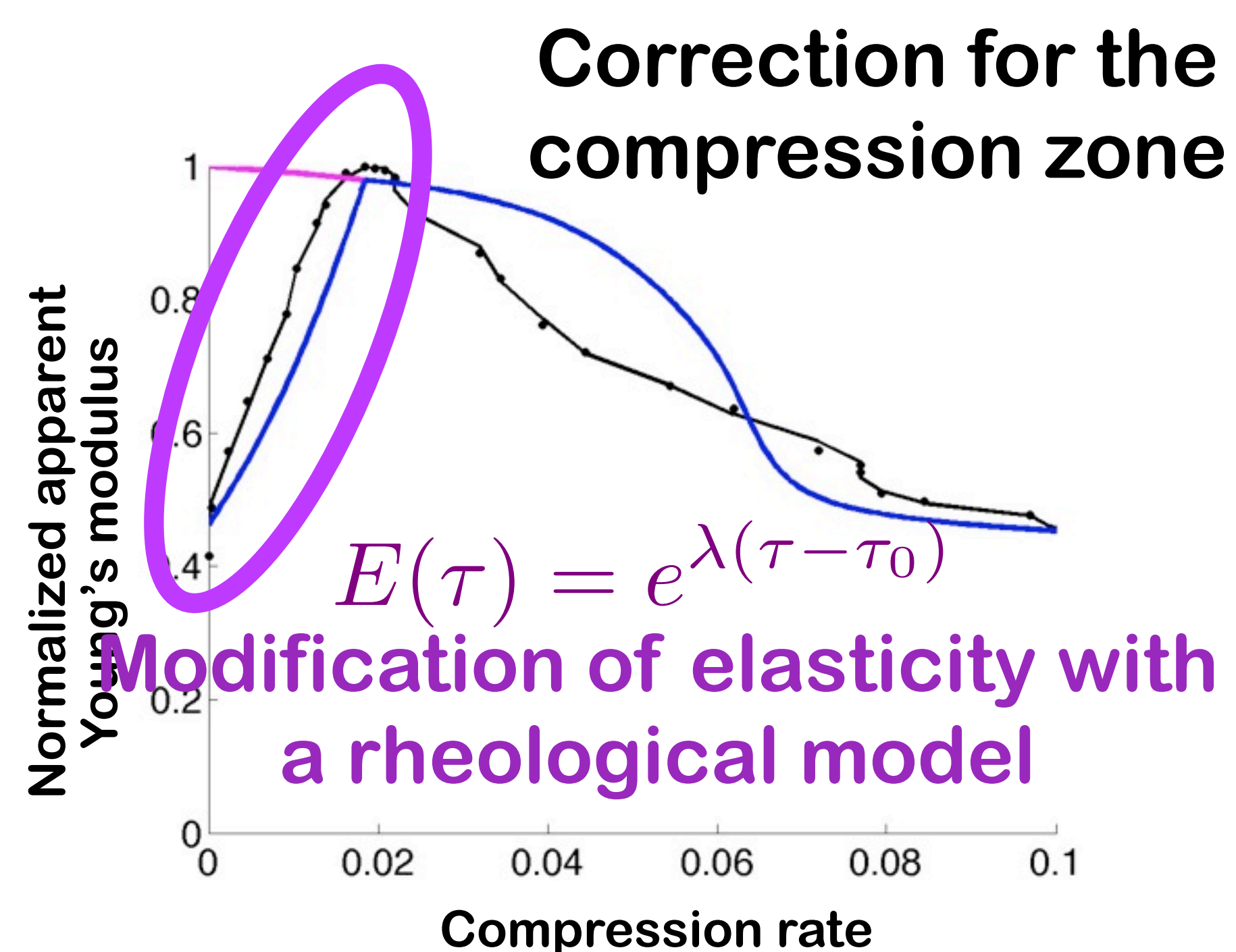
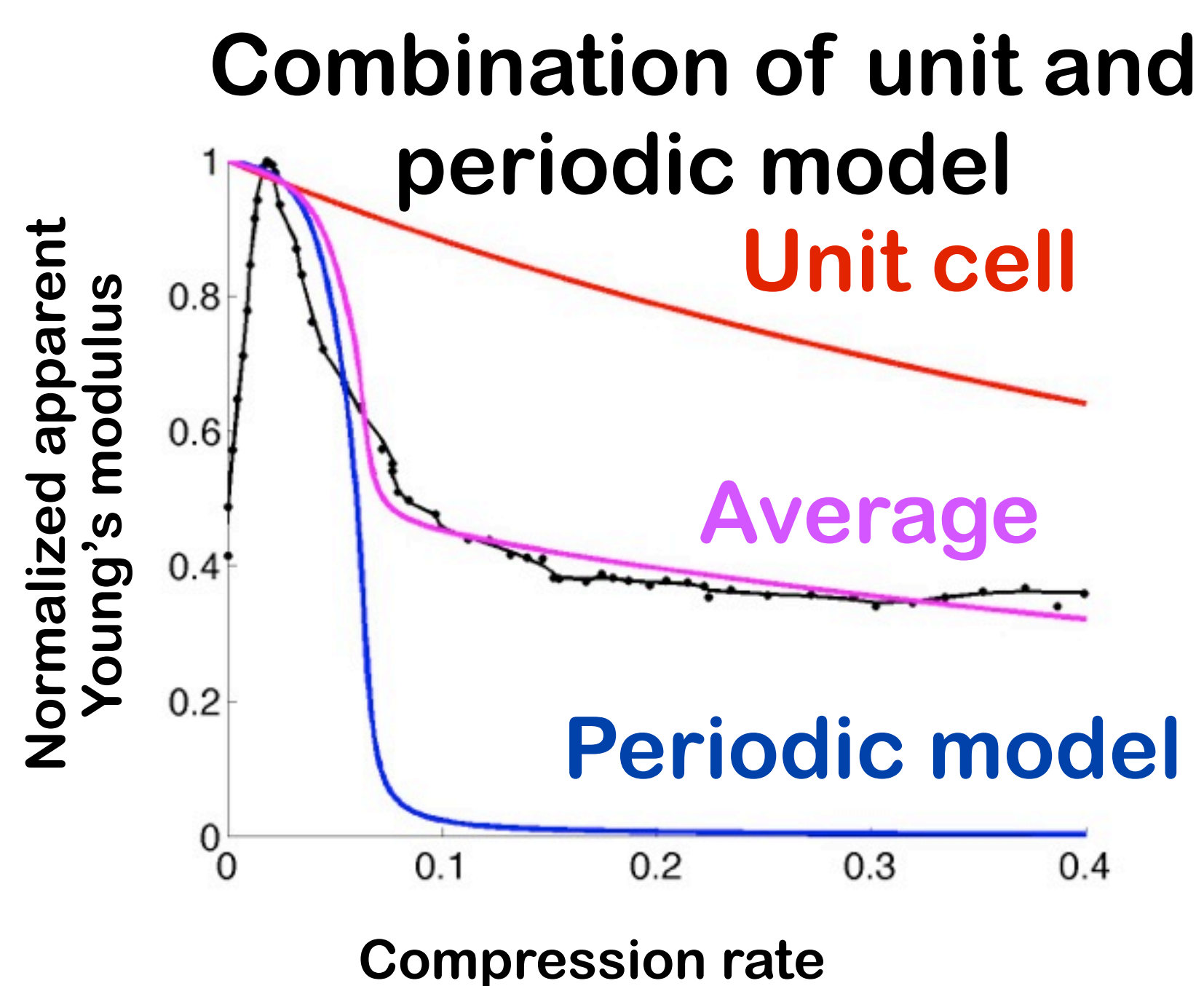
### Experimental setup

- ✓ Quasistatic experiments
- ✓ Rigidimeter



- Compression of beams
- Bending zone
- Plateau regime
- Densification

### Results and conclusion



- ✓ Valid approach to model influence of static compression
- ✓ Good qualitative agreement
- ✓ Perspective: corotational formulation