

Modelling Extreme Deformation in Truss Metamaterials

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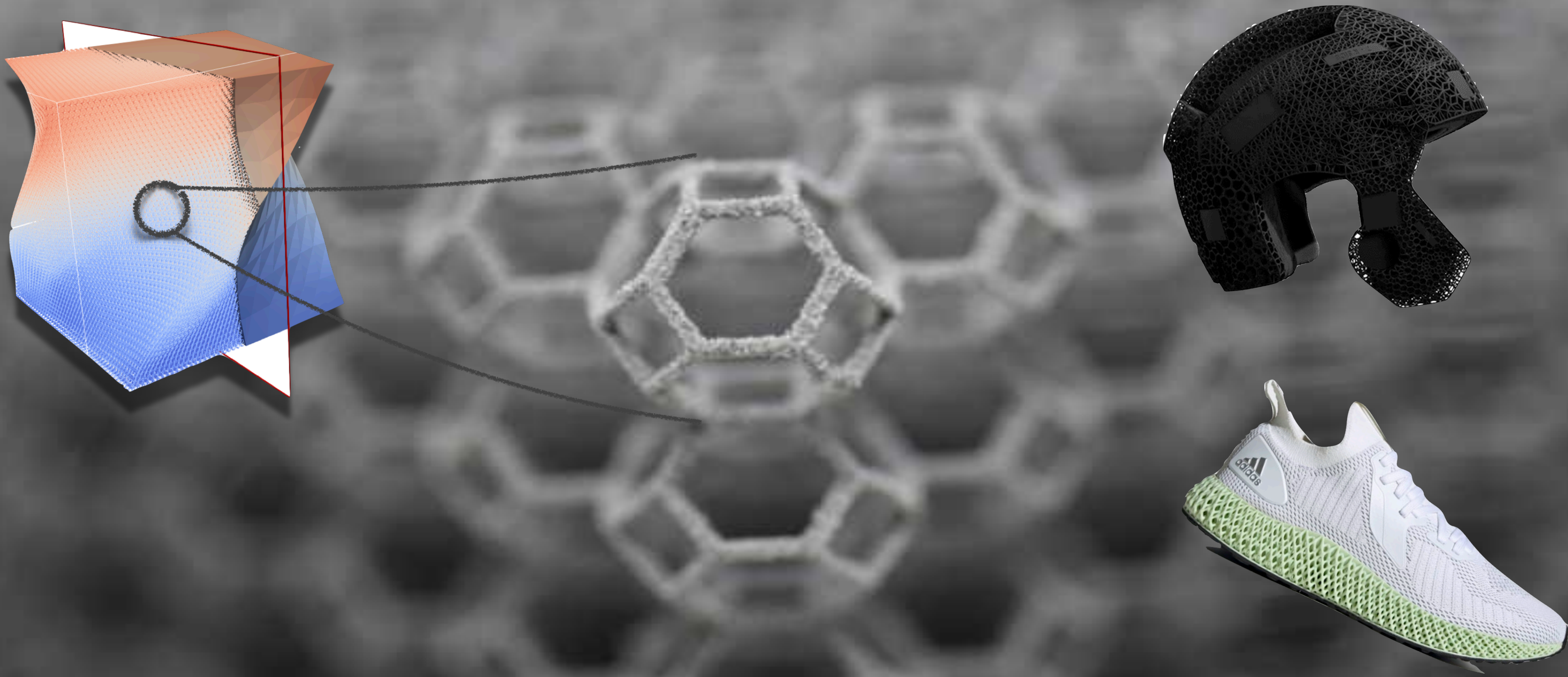
in collaboration with

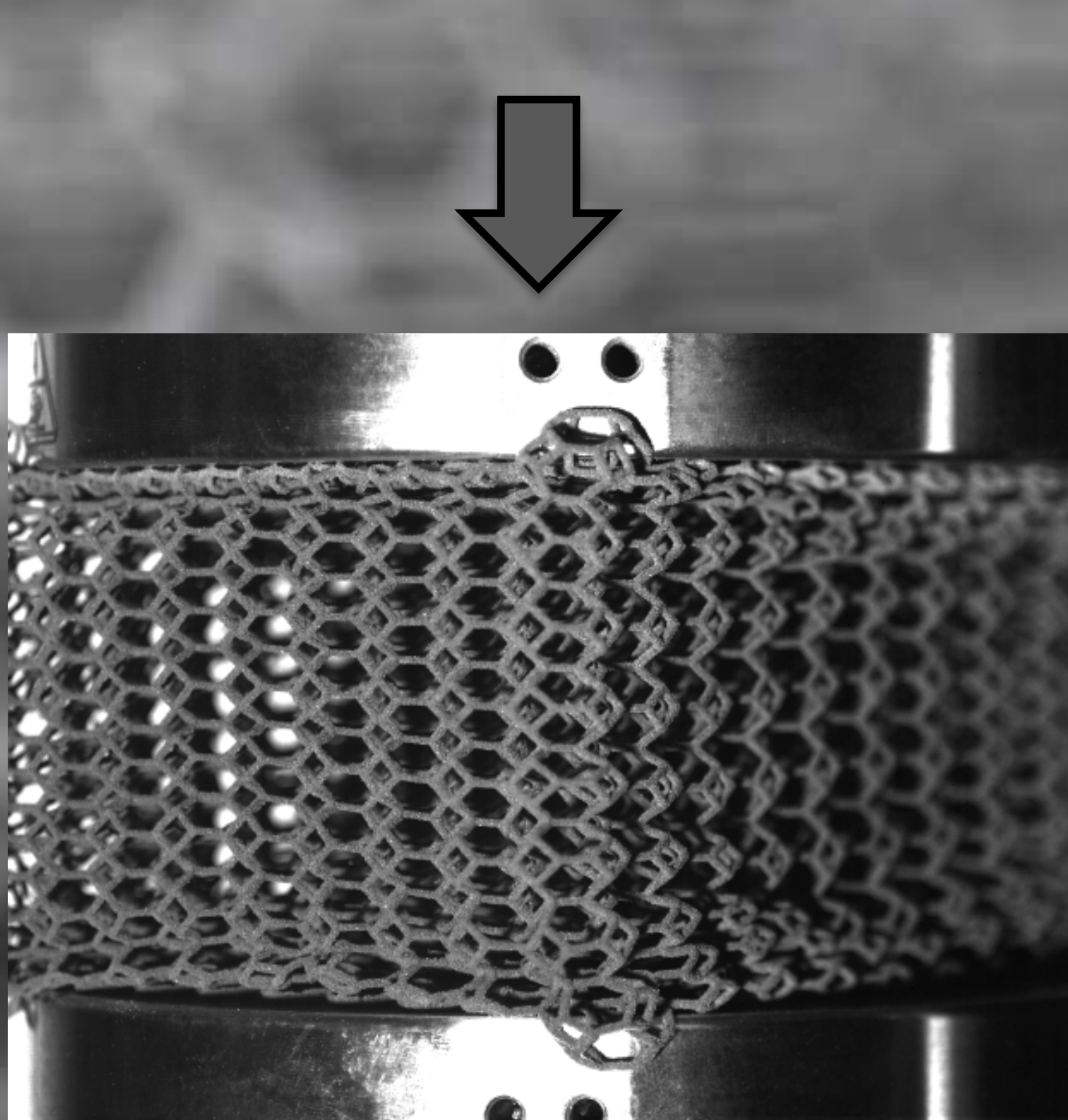
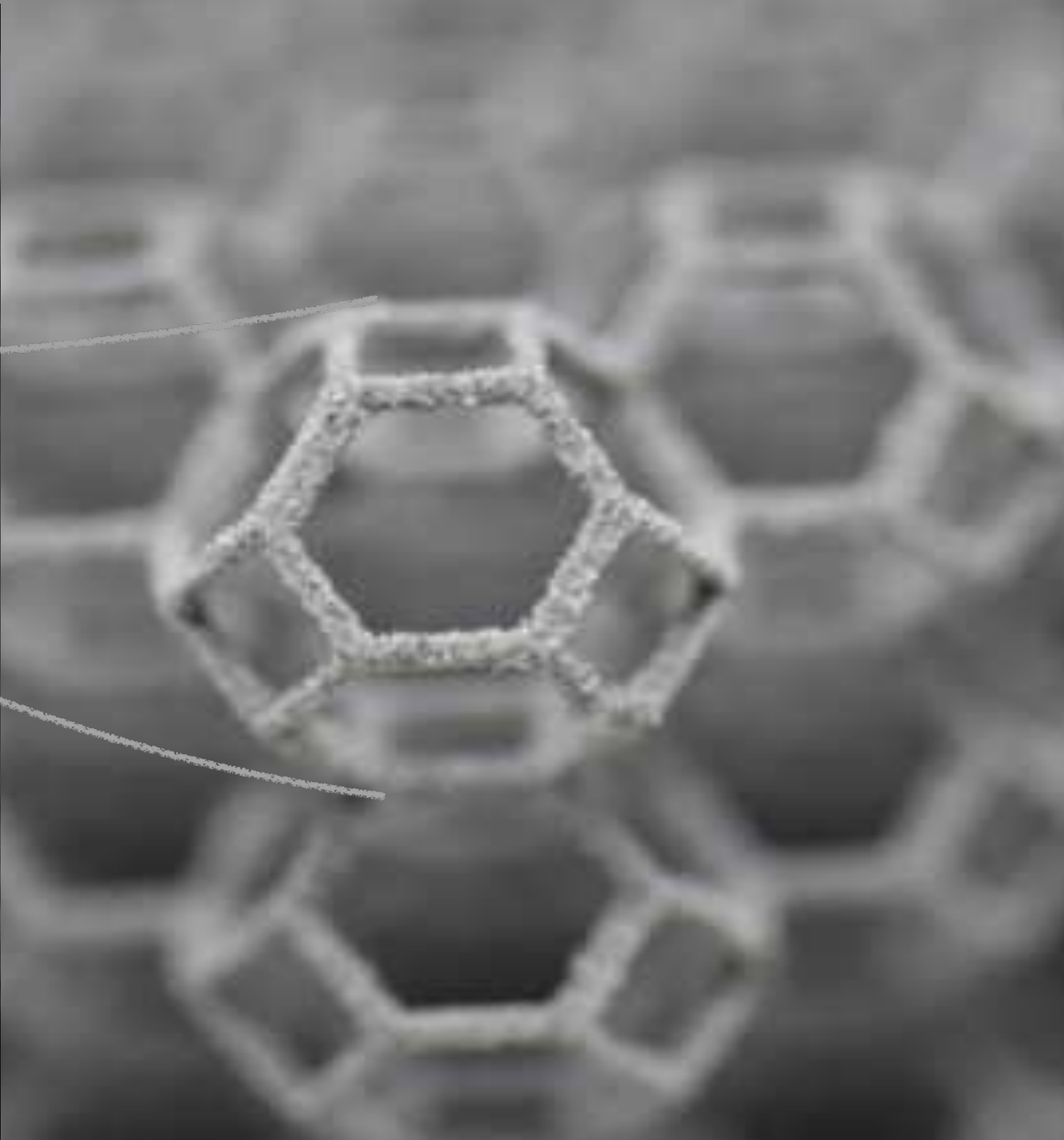
Dennis M. Kochmann

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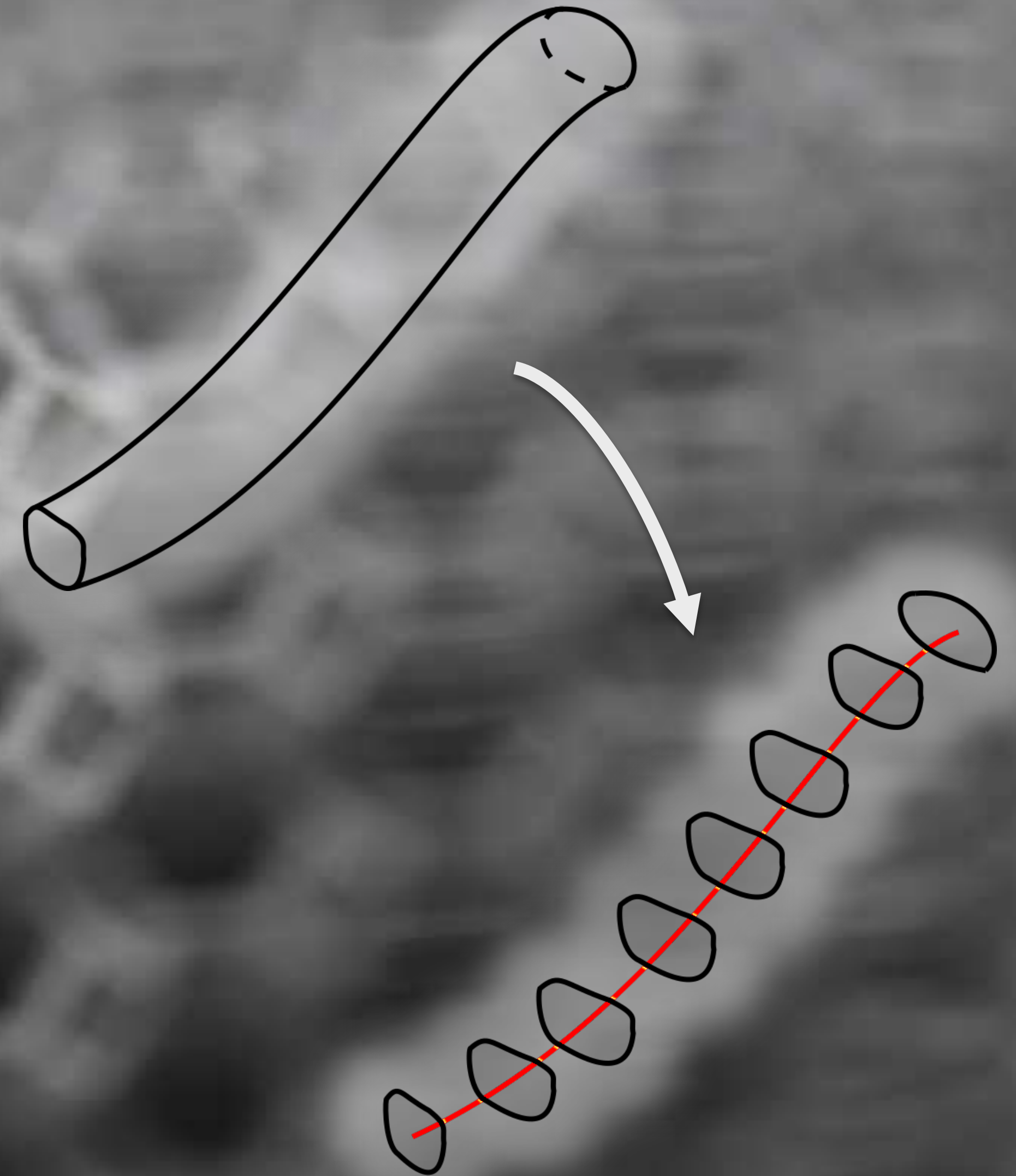
Claire Lestringant

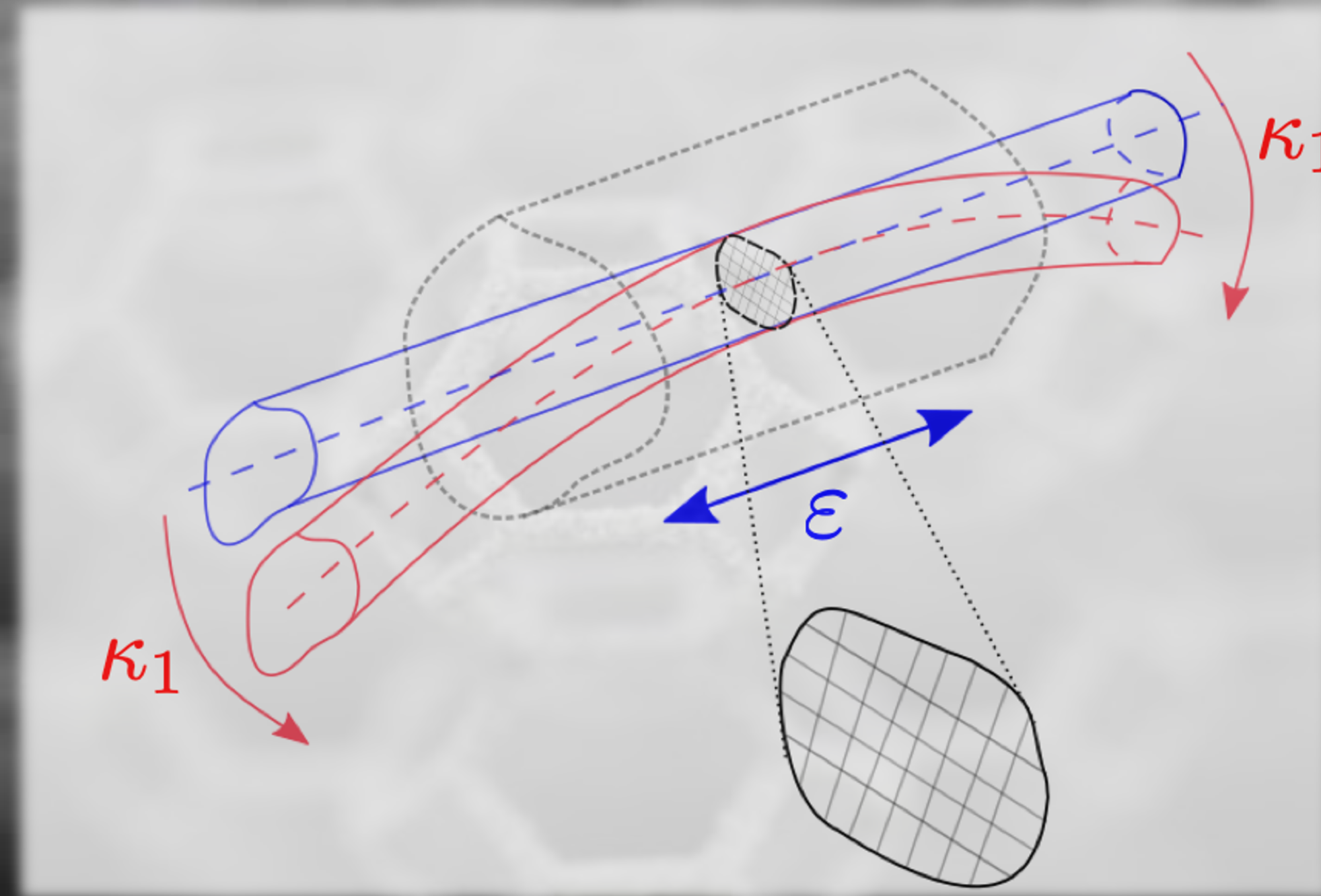
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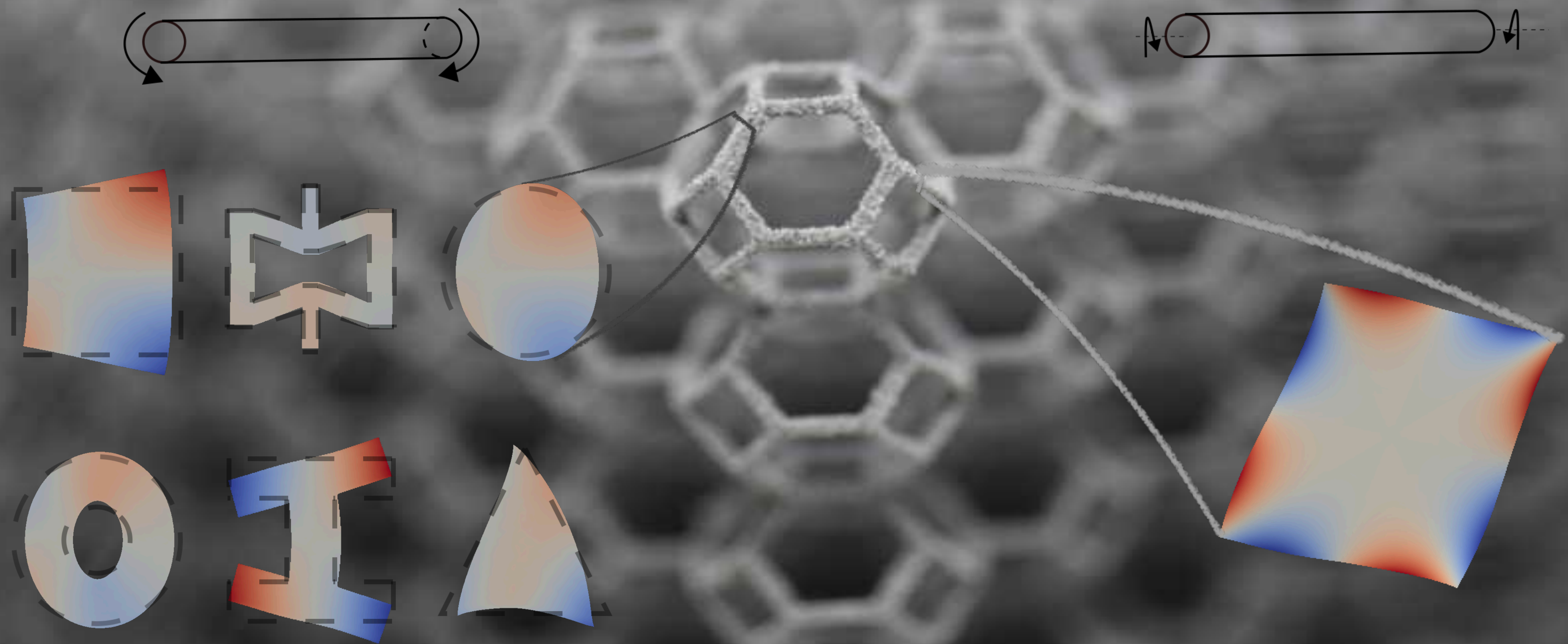




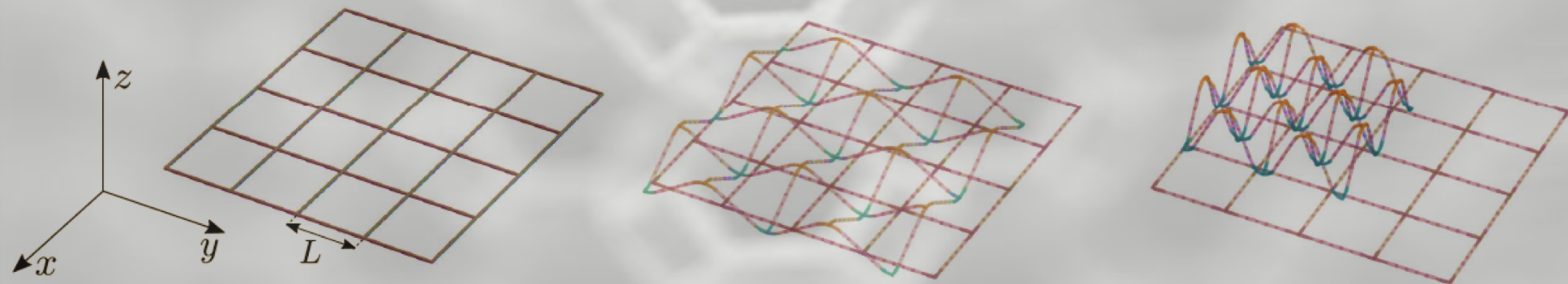
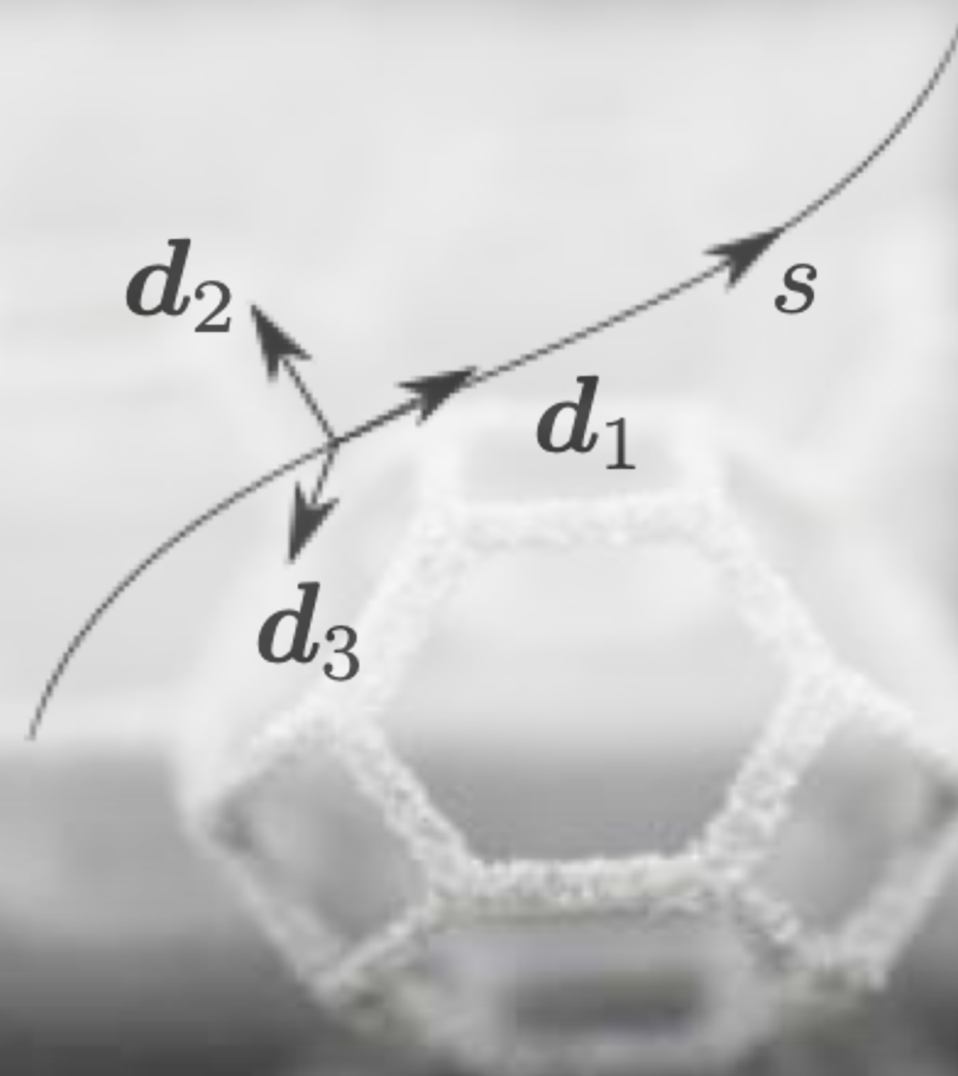
A Rigorous Numerical 1D Model for Hyperelastic Slender Solids

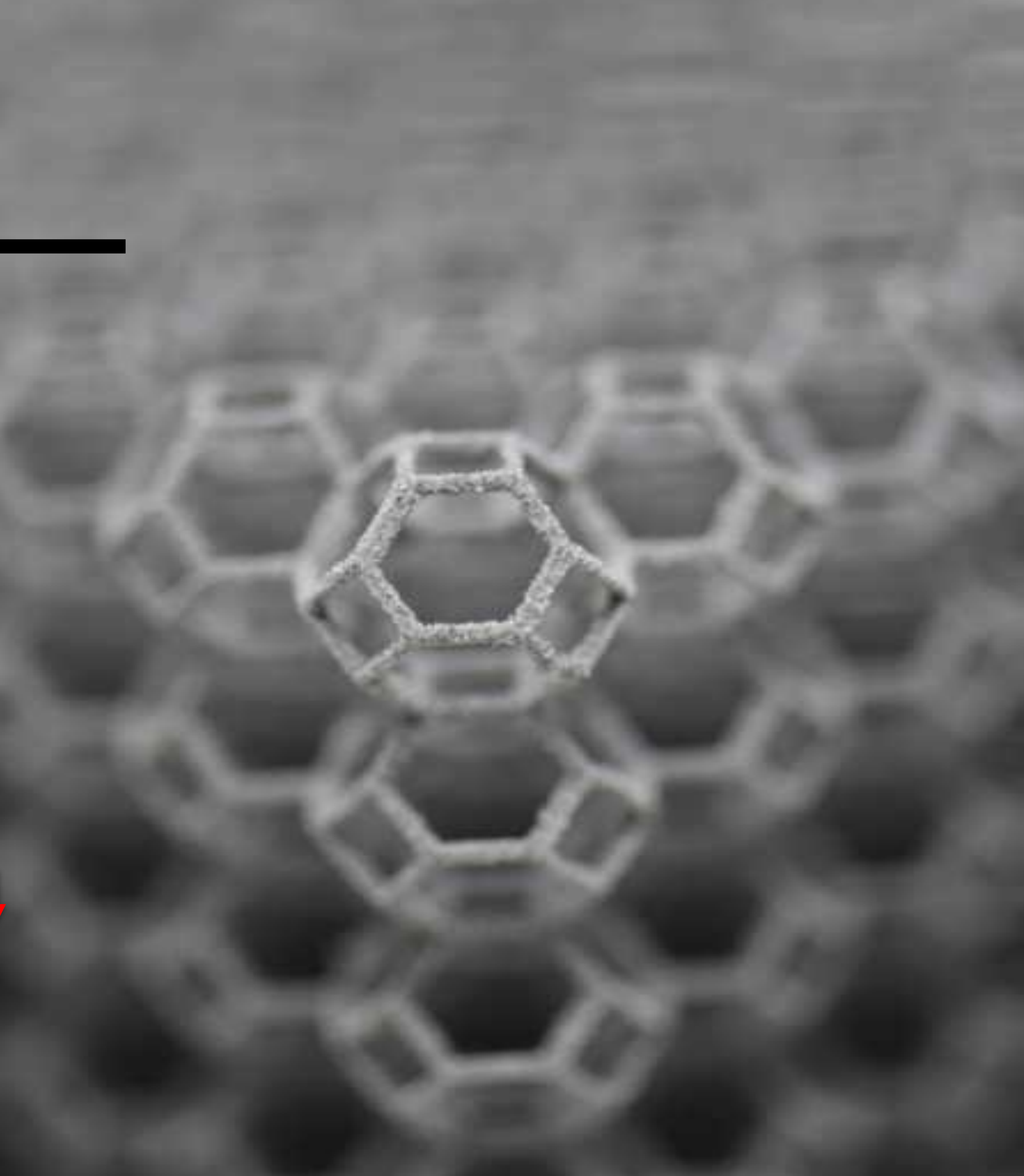
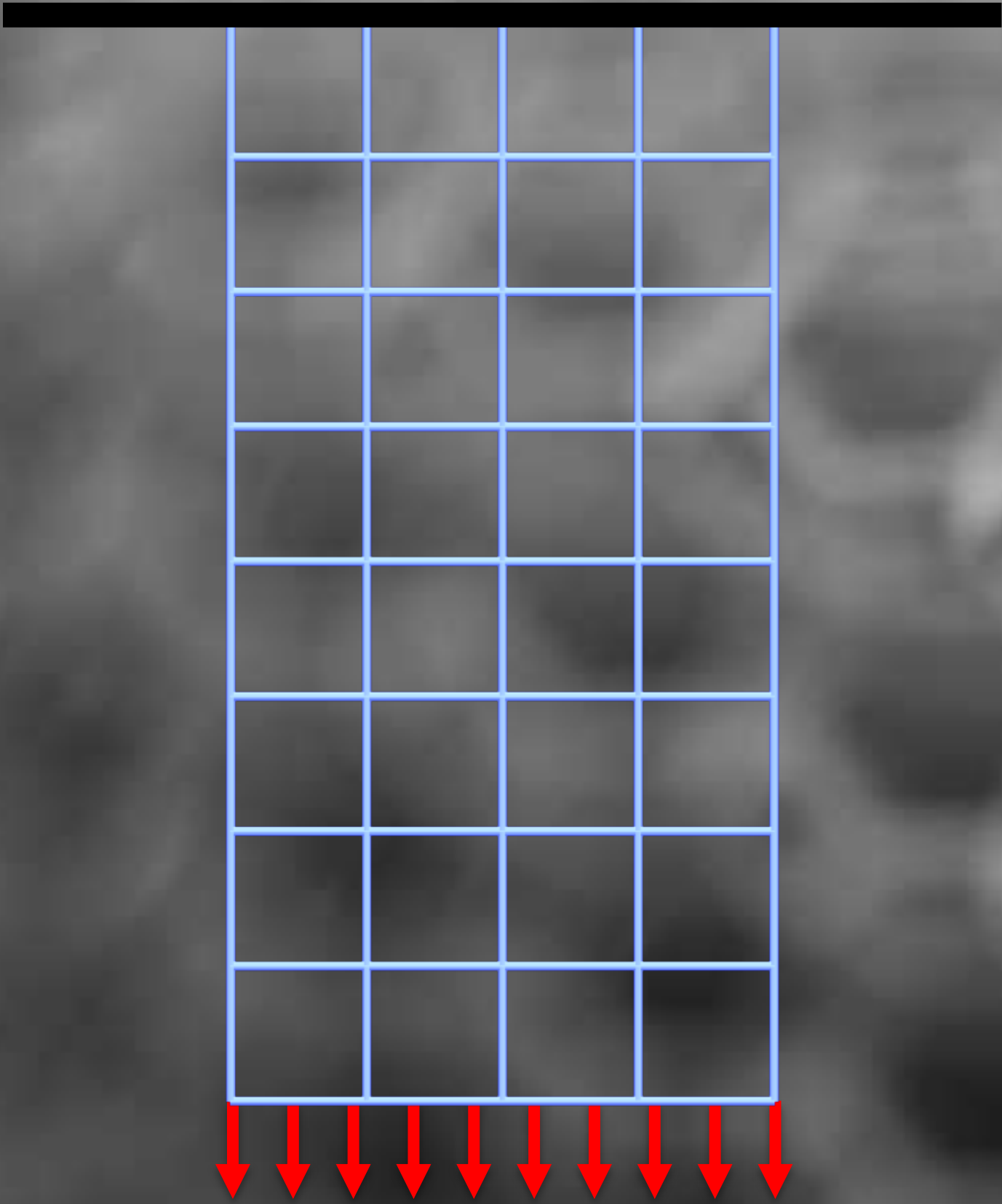


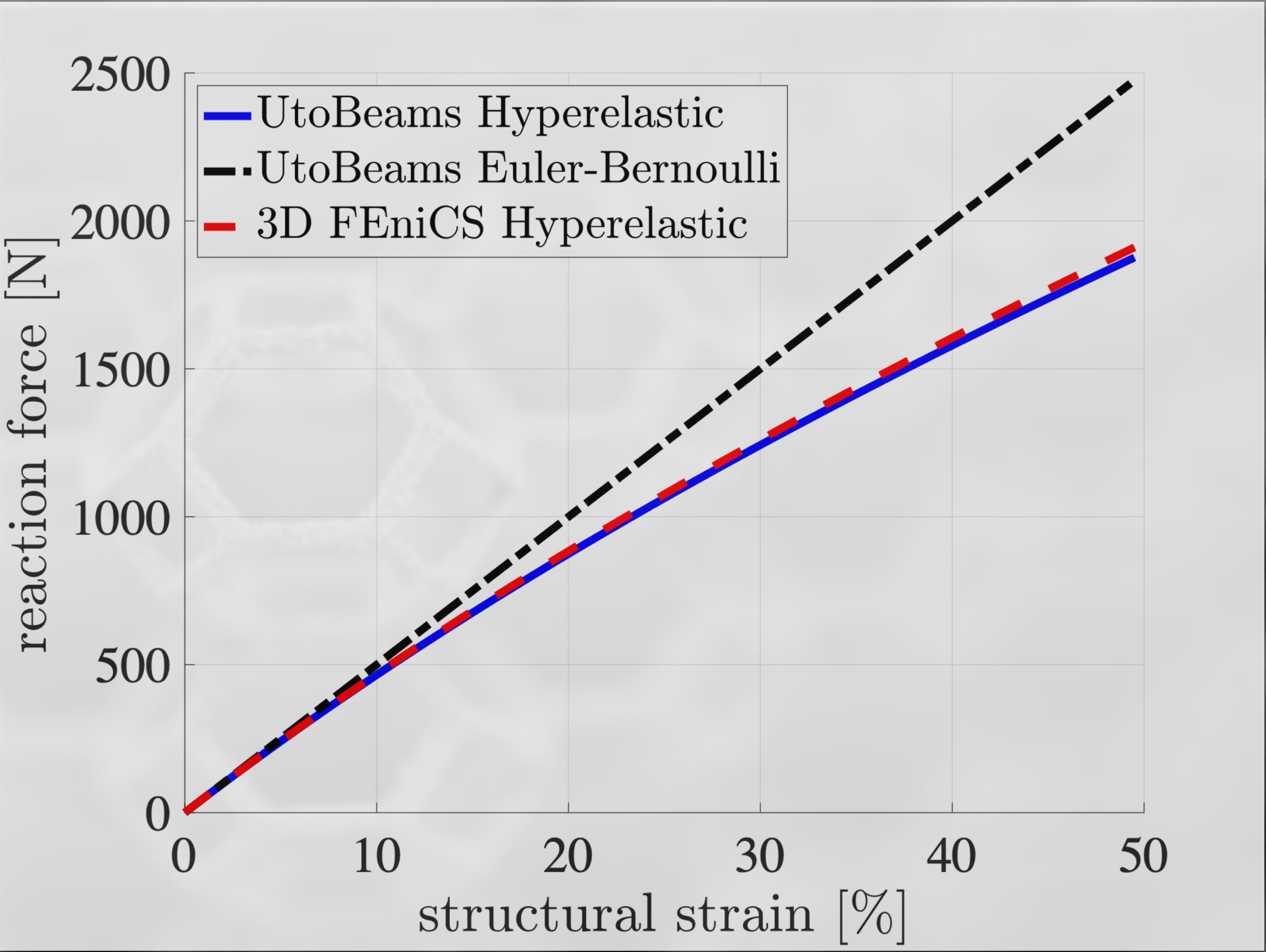
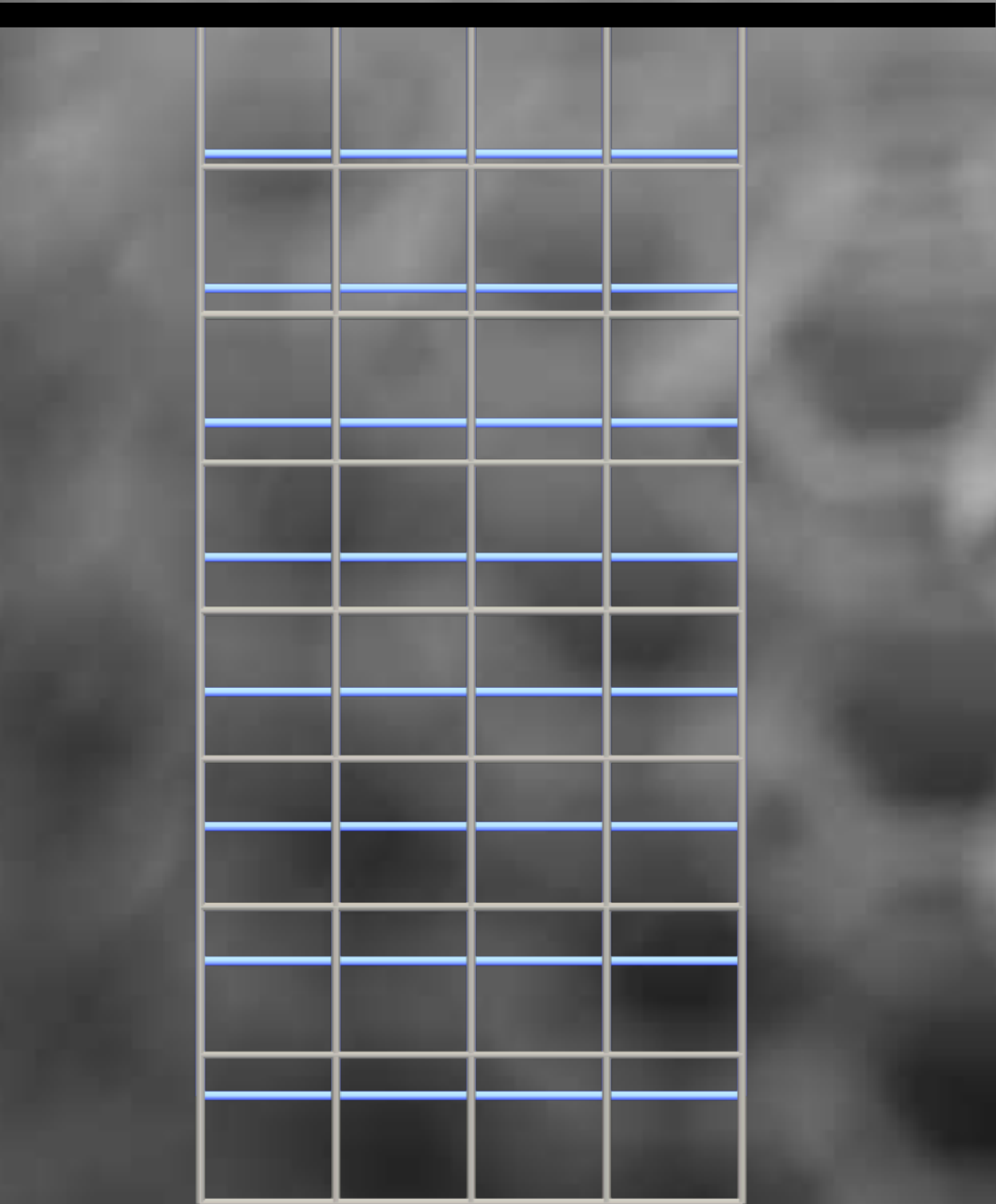


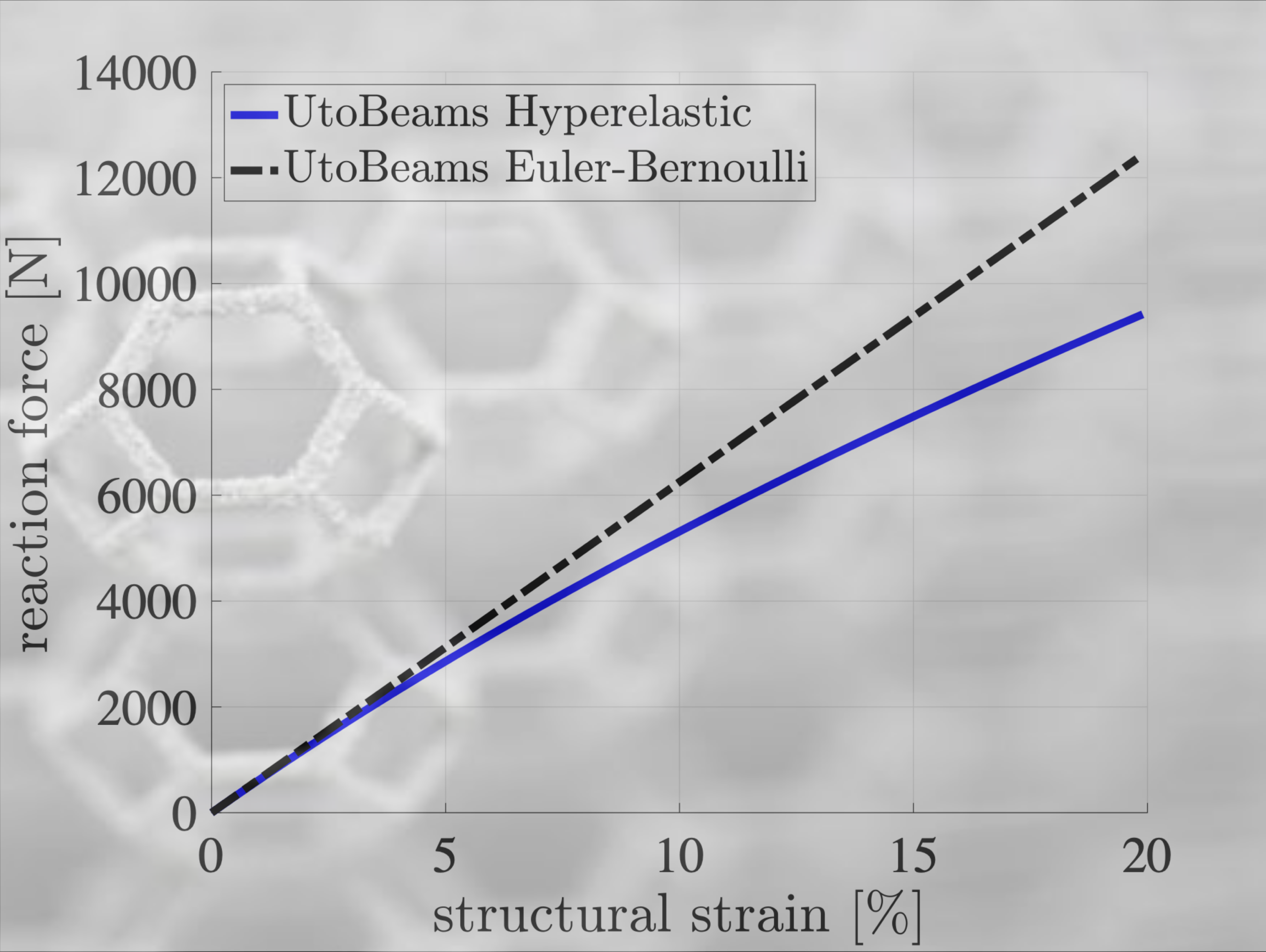
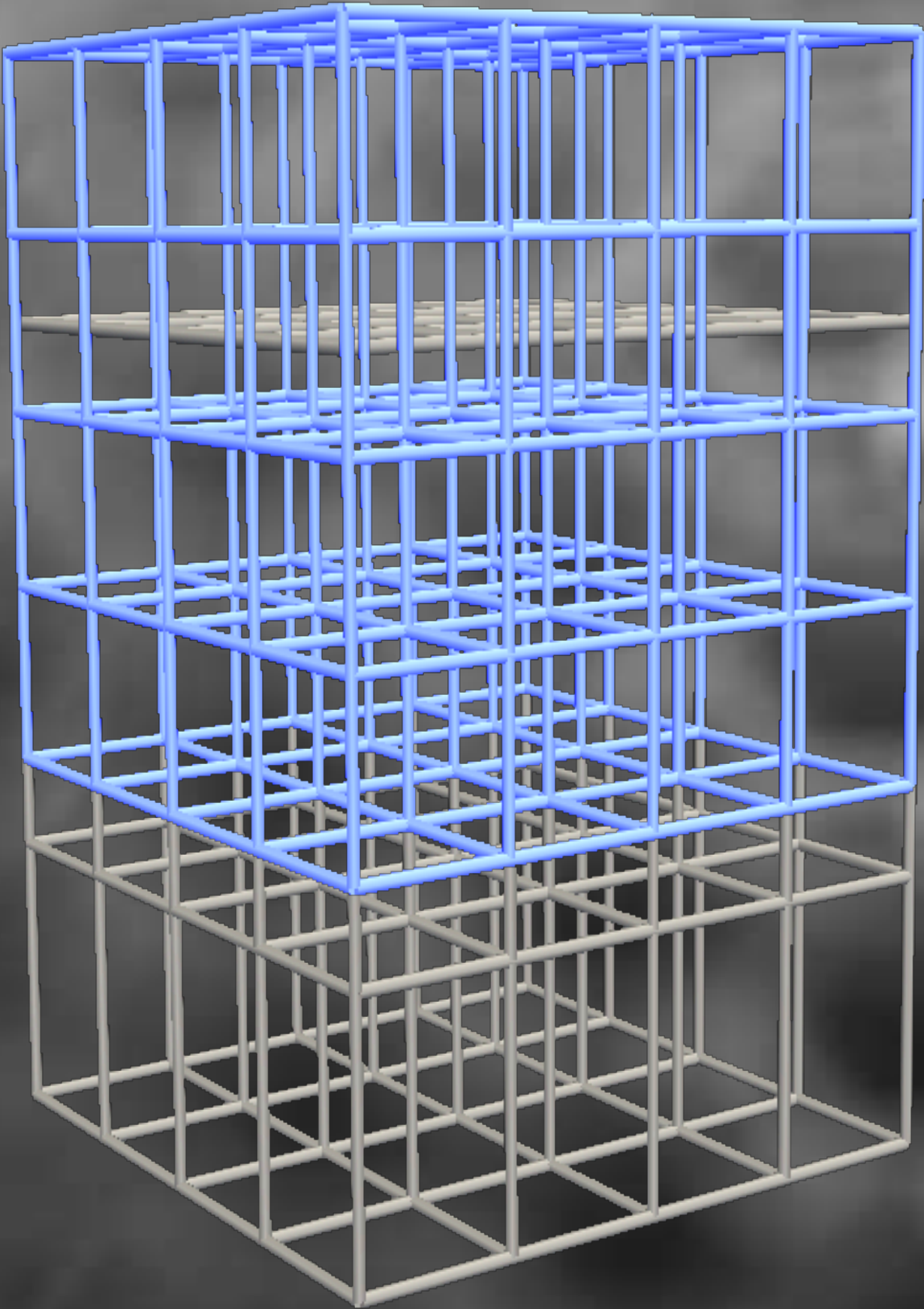


$$W_{1D}(\varepsilon(s), \kappa_1(s), \kappa_2(s), \tau(s))$$

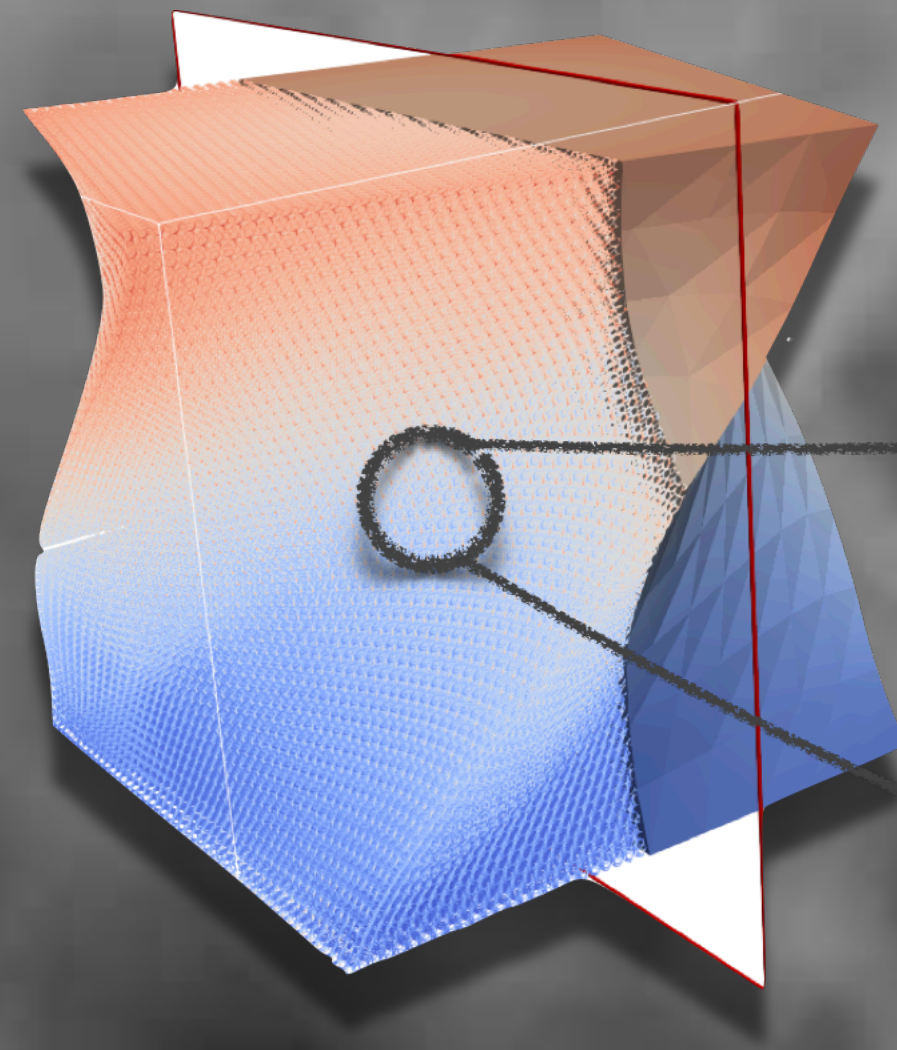




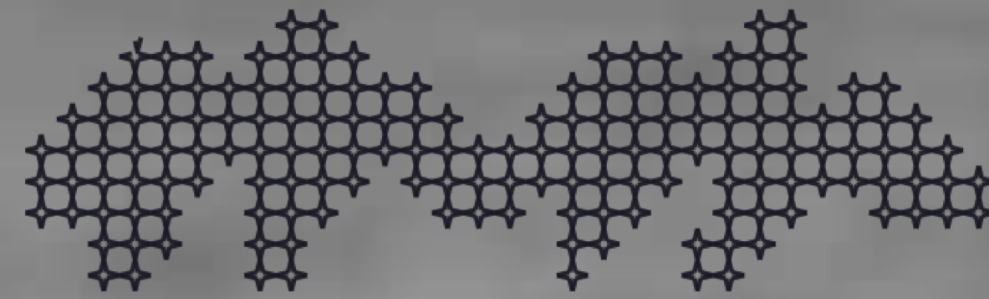
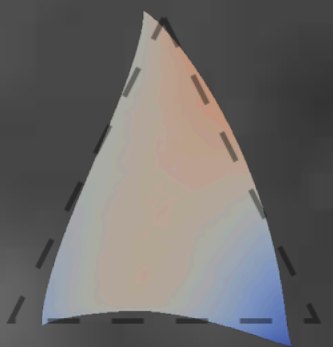
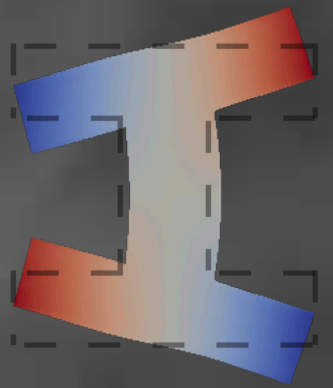
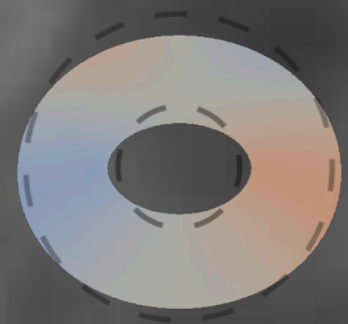
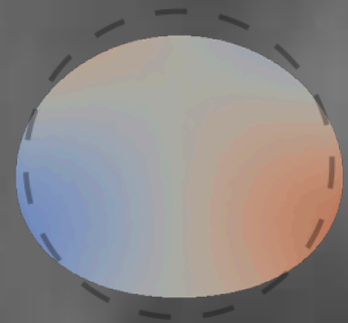
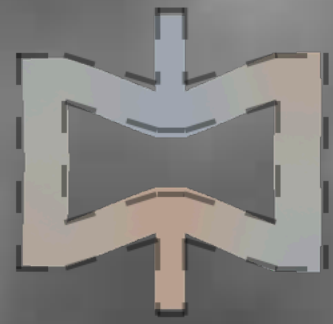
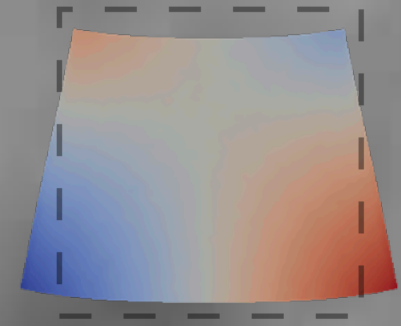




A Rigorous Numerical 1D Model for Hyperelastic Slender Solids for Modelling Extreme Deformation in Truss Metamaterials



- our formulation is generic: no restriction on
- hyperelastic law
 - cross-sectional geometry
 - heterogeneous materials in the cross-section



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