A continuum approach for the large strain finite element analysis of auxetic materials

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Highlights

- Large strains finite element analysis of auxetic materials as a continuum
- New WYPiWYG formulation based on classical invariants
- Data-driven constitutive modelling at large strains
- New WYPiWYG isotropic formulation captures exactly up to three experimental tests
- Replicates Blatz-Ko and Ciambella-Saccomandi models for conventional and auxetic foams.
- Computational efficiency is parallel to that of classical analytical models.