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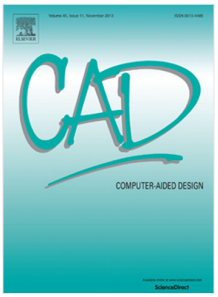

Energy balance method for modelling of soft tissue deformation

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Highlights

- A position-based incremental approach is established for soft tissue deformation based on the principle of work-energy balance.

- The proposed method employs nonlinear geometric and material formulations to account for nonlinear soft tissue deformation.

- Integration with a haptic device is achieved for soft tissue deformation with haptic feedback for surgical simulation.

- Isotropic and anisotropic deformations and soft tissues' viscoelastic behaviours can be accommodated via strain energy density functions.

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