



Systems, Methods And, Media For Simulating Deformations Of Nonlinear Elastic Bodies

[View U.S. Patent No. 10,282,899 in PDF format.](#)

WARF: P170286US01

Inventors: Nathan Mitchell, Eftychios Sifakis, Michael Doescher

The Invention

In accordance with some embodiments, systems, methods and media for simulating deformation of an elastic body are provided. In some embodiments, a method comprises: determining for each macroblock, a stiffness matrix K_i of a portion of a model of a non-linear elastic solid partitioned into cells; converting K_i into block form to include a submatrix K_{iili} for nodes between internal cells of a first macroblock; determining at least a portion of K_{iili} ; receiving input corresponding to force applied to cells of the model; determining displacements of exterior nodes of the first macroblock using the input and the portion of K_{iili} ; determining displacements of interior nodes of the first macroblock using the input and the displacements of exterior nodes; determining updated positions of the cells based on the displacements of the exterior nodes; and, causing the model to be presented using the updated positions.

Additional Information

For More Information About the Inventors

- [Eftychios Sifakis](#)

Tech Fields

- [Information Technology : Computing methods, software & machine learning](#)

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846