

عنوان مقاله:

Visco-Hyperelastic Modelling of Brain Tissue Using Compression Tests

محل انتشار:

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خلاصه مقاله:

Investigating the behavior of the brain, as the most vital organ in our body, is very important. For this purpose, the knowledge of brain's mechanical properties is inevitable. Brain tissue, like most living tissues, behaves nonlinearly. In this research the mechanical behavior of the bovine's brain tissue by conducting several uniaxial compression tests with different strain rates was studied. First, a number of tests with nearly zero strain rates were conducted to study the hyperelastic behavior of the brain. In the following, the strain rates were increased to study the viscoelastic behavior of the brain tissue. Finally, it was found that the Fung strain energy density function shows the best constitutive model for the hyperelastic behavior of the bovine's brain tissue in compression. Comparing these results with the experimental data reported for human's brain tissue it was concluded that bovine's brain tissue has less stiffness in compression.

کلمات کلیدی:

.Brain Tissue; Hyperelasticity; Viscoelasticity

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