FINITE ELEMENT METHOD OF STRESS ANALYSIS OF RUBBER CONTINUMS FOR AXI-SYMETRIC CASE

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This paper discusses a search method for minimisation of the total potential energy of a finite element grid. The compression mode of deformation of a cylindrical rubber block is considered. An axial plane of the block is divided into a number of elements of specified shapes. A method based on the powerful Powells' algorithm for optimisation is used to minimise the total potential energy by the model movements. The method is easily converted to analyse the plane-strain and plane-stress situations. It is shown that the proposed algorithm converges faster than that of Lindley's.

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