Single-Element Simulations of Wood Material in LS-DYNA

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Abstract : In this paper, in order to investigate the behavior of the wood structure, the non-linearity of wood material model in LS-DYNA is adopted. It is difficult and less efficient to conduct the experiment of the ancient wood structure, hence LS-DYNA software can be used to simulate nonlinear responses of ancient wood structure. In LS-DYNA software, there is material model called *MAT_WOOD or *MAT_143. This model is to simulate a single-element response of the wood subjected to tension and compression under the parallel and the perpendicular material directions. Comparing with the exact solution and numerical simulations results using LS-DYNA, it demonstrates the accuracy and the efficiency of the proposed simulation method.