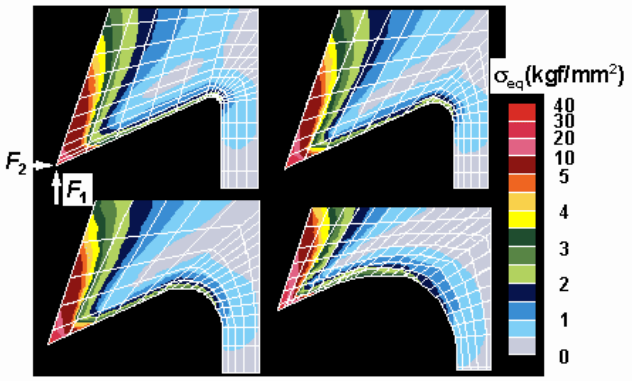
1993

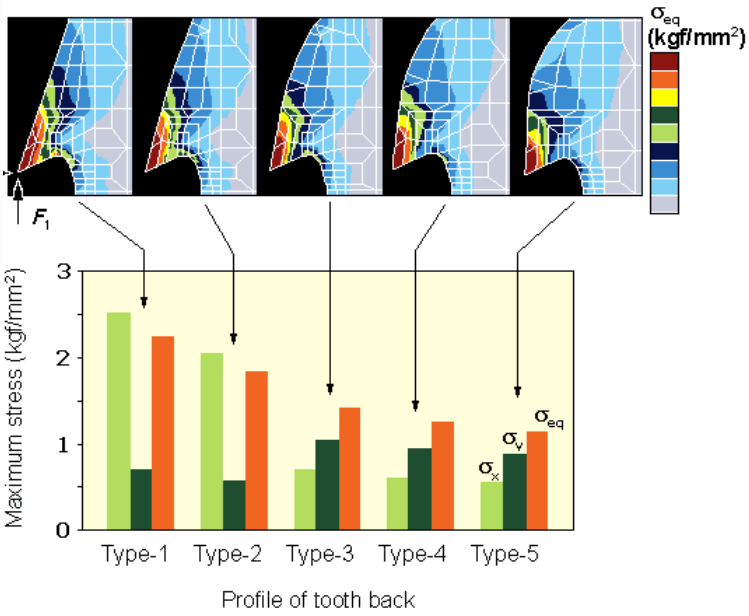
Optimum Design of Woodworking Tools Using FEM

The design of woodworking tool should be optimized for keeping the static or dynamic stability, the strength and the lifetime and also the cutting performance. The condition for the optimum design of woodworking tools were investigated by analyzing the deformation, the stress, the vibration mode and the natural frequency of the woodworking tool using finite element method (FEM).

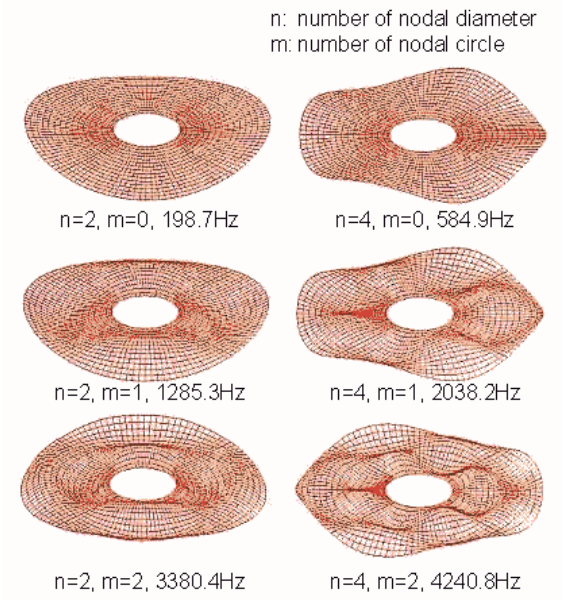


NU-type tooth

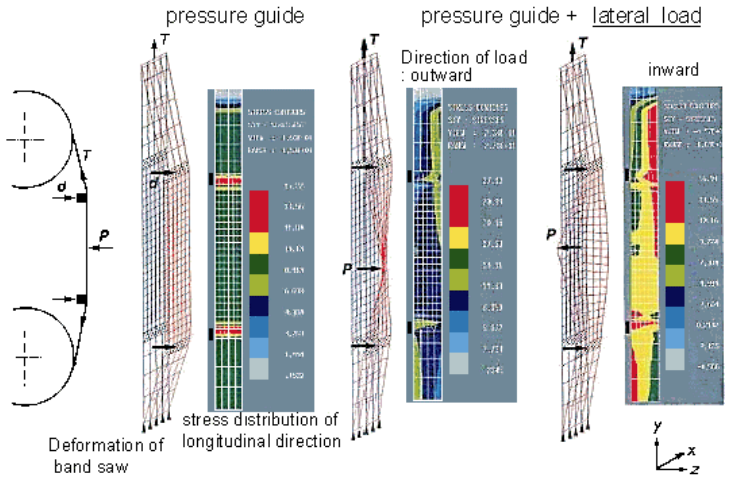
The stress distribution at the tooth bottom with loading cutting resistance



Relationship between the profile of tooth back and the stress concentration



Results of vibration analysis of circular material



Deformation and stress distribution of band saw using pressure guide