Loss of Uniqueness of the Boundary Value Problem Involving the Mini-Drucker-Prager CLoE Model

Abstract

The loss of positiveness of the second order work (SOW) induce the loss of uniqueness of the solution of the small strain boundary value problem as it is shown in the literature, and therefore, the onset of strain localization bands in the studied material. This paper is devoted to study the mini-CloE Drüker-Prager model. The results showed that non-associated model, although isotropic, can be the seat of strain localization in contrary to its counterpart associated isotropic model. In addition, the anisotropy is a factor encouraging the onset of strain localization. In fact, it makes the associated model subject of losing the positiveness of the SOW and accentuates the negativity of the SOW of the non-associated model. These results are similar with those established for the mini-CLoE von Mises and Mohr Coulomb models and those known for the elastic-plastic materials.

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Index Terms

Computer Science
Applied Mathematics
Keywords
Bifurcation  second order work  mini-CLoE  Drücker-Prager limit surface.