

## Abstract

Discontinuous displacement or slip line formed in elastoplastic solids needs time (virtual time of loading for static problem) to develop. Most research works focus on intact state to the onset state of strain localization, and state of strain localization with a uniform evolution. The process the state onset strain localization to the state of slip line formed had been ignored in someway. Here a finite element model with a non-uniform jump in the body is presented by means of rearranged the classical formula of elasto-plasticity to deal with the failure process, the elastoplastic stiffness matrix of damaged zone formed directly by plasticity consistency equation, in which additional shape function is not necessary. The results of three examples illustrate that the method can work soundly and the results fit in with the failure phenomenon of geomaterials