عنوان مقاله:

Optimization of Constitutive Cyclic Plasticity Model by Genetic Algorithm

محل انتشار:

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خلاصه مقاله:

The present paper deals with implementation of a plastic constitutive model in which a general form of strain hardening and dynamic recovery is employed, in order to predict hysteresis loop under uniaxial cyclic loading. An elastic-plastic material model is considered as a rate independent and initially isotropic type. Although complicated models are applied to predict the material behavior, but also a genetic algorithm approach is used with simple constitutive models to attain good agreement with experimental data. Hardening and recovery terms of back stress as well as linear isotropic hardening parameter, initial uniaxial yield stress and Young module are optimized and reported for three different highly used materials. There has been observed good agreement between simulation and experiment. In comparison with earlier models, the genetic algorithm has more accurate estimation of material constants.

کلمات کلیدی:

constitutive model, hysteresis loop, hardening term, recovery term, genetic algorithm

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