

Application of tensor function representations in the analysis of distortional models of anisotropic plastic hardening()**

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THE PAPER is devoted to the analysis of the models of plastic hardening which take into account distortional, non-affine transformations of subsequent yield surfaces. The author's

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previous model of plastic hardening is studied in detail, and discussion of some other distortional models is also given, preceded by the analysis of kinematic-anisotropic hardening rules with elliptic yield surfaces. Such analysis forms a basis for further considerations, together with a certain generalization of the Baltov–Sawczuk hardening rule.

The main aim of the paper is to derive invariant forms of yield conditions for the models considered and to interpret the hardening parameters of these models in the light of the theory of tensor function representations. This is done by combining the analysis of the geometry of yield surfaces, performed in Ilyushin's vectorial stress spaces, with the approach used in the theory of representations, in which plastic anisotropy is described with the use of suitably defined structural tensors.

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