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## Instantaneously not Elongated Directors in Three-Dimensional Kinematics of the Coulomb – Mohr Medium

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Three-dimensional flows of perfectly plastic medium are considered within the framework of the Coulomb – Mohr continuum model. The model is to be used in applied problems related to limit states and flows of sands, rocks and any other kind of granular media. The present study is based on a notion of asymptotic directions of the stress tensor and the strain tensor increment and as well on instantaneously not elongated directors which are orthogonal to the asymptotic directions and lie in the plane normal to the intermediate principal stress axis. By making use of mechanical sense of asymptotic directions the canonical dyadic representations of the stress tensor and the strain tensor increment are obtained. The associate flow rule equations are analysed and then applied to study of three-dimensional irreversible kinematics of the granular media. It is shown that the dilatation is always positive excepting the case of zero internal friction. Orientations of the instantaneously not elongated linear material elements are found. The strain tensor increment represented in three dimensions by means of the instantaneously not elongated directors is obtained.

**Key words:** plasticity, yielding, flow, Coulomb – Mohr criterion, strain tensor increment, associate flow rule.

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