Physics of basic motions in asymmetric continuum

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Abstract

We consider the advantages of a formalism based on concept of the asymmetric continuum and we present some equivalence theorems relating it to the asymmetric elasticity and to micropolar and micromorphic theories as founded by Nowacki, Cosserats and Eringen.

We consider the basic processes in an asymmetric continuum which could be reduced to the point basic motions/deformations.

The co-action of spin and shear motions is assumed to play the main role in fracturing process, while the constitutive relation between the antisymmetric stresses and rotations replaces the friction constitutive law.

Key words: asymmetric stresses, spin and twist motion, friction antisymmetric law, self-field nuclei.