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# Piola Transformations and contact interactions for Second Gradient Continua and some related remarks on history of mechanics

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## Abstract

The recently obtained Piola transformations for second gradient continua are presented. They prove that edge and surface contact forces in Lagrangian description do not depend only on their Eulerian counterparts but also on Eulerian contact double forces.

A careful discussion about the limited validity of so-called Cauchy postulate for stress induces some remarks on relevant aspects of history of mechanics and in particular on the development of the concepts of force, stress and couples.

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