Symmetric matrix fields in the finite element Method

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Abstract
The theory of elasticity is used to predict the response of a material body subject to applied forces. In the linear theory, where the displacement is small, the stress tensor which measures the internal forces is the variable of primal importance. However the symmetry of the stress tensor which expresses the conservation of angular momentum had been a challenge for finite element computations. We review in this talk approaches based on mixed finite element methods.