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FINITE ELEMENTS FOR SYMMETRIC TENSORS IN THREE DIMENSIONS ON RECTANGULAR MESHES

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In elasticity theory the stress tensor measures the response of an elastic body subjected to an external force. The symmetry of the stress tensor which expresses conservation of angular momentum had remained a challenge for mixed finite element discretizations. In this talk we present mixed finite element methods for three dimensional elasticity problems which may be viewed as analogues of the triangular and tetrahedral elements on rectangular meshes in 3 dimensions. Preliminary report.

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