Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-65-1126 **Gerard M Awanou*** (awanou@ima.umn.edu), Institute for Math. and its Applications, University of Minnesota, 400 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455, and **Douglas Arnold**. *Rectangular Mixed Finite Elements for Elasticity.*

We present a family of stable rectangular mixed finite elements for plane elasticity. Each member of the family consists of a space of piecewise polynomials discretizing the space of symmetric tensors in which the stress field is sought, and another to discretize the space of vector fields in which the displacement is sought. These may be viewed as analogues in the case of rectangular meshes of mixed finite elements recently proposed for triangular meshes. As for the triangular case the elements are closely related to a discrete version of the elasticity differential complex. (Received October 04, 2004)