

A Hybrid Finite Element Method for Gradient Elasticity

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Summary

This paper proposes a hybrid finite element formulation of the strain gradient elasticity that provides a natural conceptual framework to properly deal with the interelement compatibility of normal displacement gradients and the equilibrium of non-classical boundary forces. It is based on developments firstly proposed by Mindlin and further elaborated by Aifantis. Consistency is assessed – in the full manuscript version – by means of several generalized patch tests.

