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Bending of laminated beams using Timoshenkomodel via nonlocal elasticity

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Abstract : In this paper, the bending of laminated beamsusing first order shear deformation theory via nonlocal elasticityis presented. The analysis is presented for static flexure ofsymmetric and anti-symmetric cross-ply laminated beamssubjected to sinusoidal load.Governing equations and boundary conditions are obtainedby using the principle of virtual work.Analytical solutions of bending for simply supportedlaminated beams are presented using this theory to illustrate theeffect of nonlocal theory, and the influence of aspect ratio isexamined.

Keywords : First-order shear deformation theory; bending, laminated beam, non local