

AN EXPERIMENTAL INVESTIGATION OF PARTIALLY SYMMETRIC BI-STABLE COMPOSITE LAMINATES.

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A bi-stable composite laminate is a composite laminate that exhibits multiple stable static equilibrium states. If the bi-stable composite is actuated it will jump, or snap, to its other equilibrium state and then remain there without any further actuation. This unique behavior of bi-stable composites has made them the subject of much research in the areas of morphing structures as well as energy harvesting. Much of the research done on bi-stable laminates has been focused on the fundamental characterization of the bi-stable behavior and of the laminate equilibrium shapes. Little investigation has been done on how the boundary conditions affect the bi-stable behavior. This study investigates how the amount of symmetry in a partially-symmetric partially-asymmetric rectangular laminate under an imposed fixed boundary condition affects the bi-stability and the curvature of the laminate.

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