عنوان مقاله:

An experimental-theoretical model to predict mechanical behavior of single-lap bolted composite joints

محل انتشار:

کنفرانس دو سالانه بین المللی مکانیک جامدات تجربی (سال: 1396)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

In this research, an experimental analysis combined with an analytical approach is presented to determineeffect of material nonlinearity on mechanical behavior of a single-lap single-bolt composite joint. For experimentalanalysis, two different layup (quasi-isotropic and orthotropic) under an in-plane tensile load were selected. Resultsshow that the quasi-isotropic laminate with a layup of [-45/0/45/90]s in comparison with the orthotropic laminate with alayup of [90/-452/45]s has about 22% greater maximum load, 20% greater stiffness and 62.3% greater displacement tofailure. Moreover, using the theoretical model presented in this research, the stiffness of the composite bolted joint .waspredicted. By comparing the theoretical and experimental results, the capability of the model was verified

کلمات کلیدی:

Experiment, Theory, Nonlinear behavior, Stiffness, Different Layups