

Contribution in Fatigue Life Prediction of Composite Material

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Abstract : The damage evolution mechanism is one of the important focuses of fatigue behaviour investigation of composite materials and also is the foundation to predict fatigue life of composite structures for engineering application. This paper is dedicated to a damage investigation under two block loading cycle fatigue conditions submitted to composite material. The loading sequence effect and the influence of the cycle ratio of the first stage on the cumulative fatigue life were studied herein. Two loading sequences, i.e., high-to-low and low-to-high cases are considered in this paper. The proposed damage indicator is connected cycle by cycle to the S-N curve and the experimental results are in agreement with model expectations. Some experimental researches are used to validate this proposition.

Keywords : fatigue, damage accumulation, composite, evolution

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