

Estimation of fatigue life of structures from observed damage

Aeronautical Research Laboratories - Tension



Description: -

-Estimation of fatigue life of structures from observed damage

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Local multiaxial fatigue damage estimation for structures under random vibrations

Section snippets Materials and specimens The CFRP laminates investigated in this work are composed by T300 3K fibers and modified 3252s thermosetting epoxy matrix.

Fatigue damage and residual fatigue life assessment in reinforced concrete frames using PZT

Four main hysteresis types can be observed during cycle loading.

Fatigue damage and residual fatigue life assessment in reinforced concrete frames using PZT

The presented non-linear models of the stiffness degradation and the residual slip were in good agreement with the experimental results. All curves can be divided into three segments, which demonstrate that the joints deform in three states.

Fatigue life estimation of structures under statistically and spectrally similar variable amplitude loading

The mechanical Mechanical properties under static tension Figure 5 shows the experimental force-displacement curves obtained under monotonic static loading. However, as for the composite structures on automobile parts serving in cycle loading environment, the using reliability and security will be seriously reduced, and the fatigue failure behavior of joints are worth of studying. But the application of this criterion need a high computing time if it's evaluated in the time domain.

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The experimental study is conducted on a RC frame structure of overall size 1. Segment AB is a straight line, which indicates that the joints deform elastically.

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Compared with solely bonding or riveting joints, hybrid joints presented superior static performance in the aspects of peak load and energy absorption. Five duplicated specimens were tested. Thirdly, fatigue behavior was deeply discussed and modeled.

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