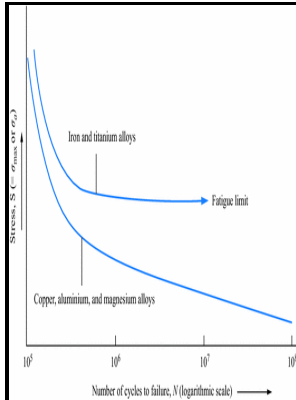


# Estimation of fatigue life of structures from observed damage

## Aeronautical Research Laboratories - Fatigue life estimation of structures under statistically and spectrally similar variable amplitude loading



Description: -

- Estimation of fatigue life of structures from observed damage

-

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Sección de obras de historia

Kyūko sensho -- 36

Aeronautical Research Laboratories. Structures and materials note --

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Notes: Bibliography: p. 7.

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Tags: #Tension

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

Nevertheless, limited published works concerning the fatigue behavior of the bonding and riveting hybrid joints could be found, while joints of bonding and bolting have been deeply researched. Many studies demonstrate that the Sines criterion seems to give the best evaluation of the fatigue damage.

### [PDF] Study on Fatigue Life Estimation for Aircraft Engine Support Structure

In this study, the estimation of fatigue life was carried out on the basis of a cumulative damage theory; the working S-N curve and the equivalent stress on the engine support structure significantly affect the safety of the aircraft. For the first time, results have revealed a good comparison in obtaining flexural rigidity-based stiffness using global dynamic technique GDT and CVS-identified stiffness using EMI technique for the full-life span of the RC structure under high-cycle fatigue.

### Tension

The maximum stress observed was 1,080 MPa in the case of scissors link under crash load condition, and there was a 5% margin for the allowable stress corresponding to the...

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

A new fatigue life prediction framework provides an improved life prediction under statistically and spectrally similar irregular variable-amplitude loading for a notched beam model. This paper investigates a possible application of the electro-mechanical impedance EMI technique in diagnosing high-cycle and low-strain fatigue damage in the reinforced concrete RC structures.

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

Four main hysteresis types can be observed during cycle loading.

#### **Local multiaxial fatigue damage estimation for structures under random vibrations**

Five duplicated specimens were tested. A finite element example is then used, at the end of this paper, to illustrate the application of the proposed strategy of calculation of the fatigue damage. Secondly, according to the fitted F-N curve, an equation was established for fatigue life prediction.

#### **Local multiaxial fatigue damage estimation for structures under random vibrations**

Fatigue failure behavior of solely bonding and riveting joints have been studied a lot. In recent research on fatigue deterioration in joints between composites, scholars have already proposed various numerical and mathematical models of stiffness degradation in bonding and bolting joints based on experimental results, however, less were mentioned about rivet-bonding joints.

#### **[PDF] Study on Fatigue Life Estimation for Aircraft Engine Support Structure**

Numerical models are commonly developed based on fatigue failure mechanism with the help of simulation software.

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