

Multiaxial Fatigue: Experiments And Modeling

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Abstract :

The seminar starts with an overview of multiaxial fatigue, including a discussion of the significance of considering multiaxial stresses in fatigue design, classification of multiaxial loads, and an overview of the multiaxial fatigue life estimation methods. Then, the broad range of issues which are commonly encountered when dealing with multiaxial fatigue will be presented. These include damage mechanisms, non-proportional hardening and constitutive behavior, damage parameters and life estimation, variable amplitude loading, cycle counting, damage accumulation, mixed-mode crack growth, and notch effects. An emphasis of the seminar will be on multiaxial fatigue crack growth and modeling aspects. Small crack growth behavior with regards to its growth mechanism as well as crack growth rate under combined stresses will be discussed.