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Autore	Li Longbiao
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	Time-dependent fatigue behavior of ceramic-matrix composites at elevated temperatures.
Sommario/riassunto	This book investigates the time-dependent behavior of fiber-reinforced ceramic-matrix composites (CMCs) at elevated temperatures. The author combines the time-dependent damage mechanisms of interface and fiber oxidation and fracture with the micromechanical approach to establish the relationships between the first matrix cracking stress, matrix multiple cracking evolution, tensile strength, tensile stress-strain curves and tensile fatigue of fiber-reinforced CMCs and time. Then, using damage models of energy balance, the fracture mechanics approach, critical matrix strain energy criterion, Global Load Sharing criterion, and hysteresis loops he determines the first matrix cracking stress, interface debonded length, matrix cracking density, fibers failure probability, tensile strength, tensile stress-strain curves and fatigue hysteresis loops. Lastly, he predicts the time-dependent mechanical behavior of different fiber-reinforced CMCs, i.e., C/SiC and SiC/SiC, using the developed approaches, in order to reduce the failure risk during the operation of aero engines. The book is intended for undergraduate and graduate students who are interested in the mechanical behavior of CMCs, researchers investigating the damage evolution of CMCs at elevated temperatures, and designers responsible for hot-section CMC components in aero engines. .