1.	Record Nr.	UNINA9910164277803321
	Autore	Johnson W. S
	Titolo	Probabilistic Aspects of Life Prediction
	Pubbl/distr/stampa	[Place of publication not identified], : American Society for Testing & Materials, 2004
	ISBN	0-8031-5496-8
	Descrizione fisica	1 online resource (viii, 276 pages) : illustrations
	Collana	ASTM special technical publication ; ; 1450
	Disciplina	620.1/126
	Soggetti	Fracture mechanics Materials - Fatigue
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Section I: Probabilistic modeling -- Probabilistic life prediction isn't as easy as it looks / C. Annis -- Probabilistic fatigue : Computational simulation / C.C. Chamis and S.S. Pal The prediction of fatigue life distributions from the analysis of plain specimen data / D.P. Shepherd -- Modeling variability in service loading spectra / D.F. Socie and M.A. Pompetzki -- Section II: Material variability -- Probabilistic fracture toughness and fatigue crack growth estimation resulting from material uncertainties / B. Farahmand and F. Abdi -- Predicting fatigue life under spectrum loading in 2024-T3 aluminum using a measured initial flaw size distribution / E.A. Debartolo and B.M. Hillberry -- Extension of a microstructure-based fatigue crack growth model for predicting fatigue life variability / M.P. Enright AND K.S. Chan -- Scatter in fatigue crack growth rate in a directionally solidified nickel-base superalloy / S. Highsmith, Jr. and W.S. Johnson -- Mechanism-based variability in fatigue life of Ti-6Al-2Sn-4Zr-6Mo / S.K. Jha, J.M. Larsen, A.H. Rosenberger, and G.A. Hartman -- Predicting the reliability of ceramics under transient loads and temperatures with CARES/life / N.N. Nemeth, O.M. Jadaan, T. Palfi, and E.H. Baker -- Fatigue life variability prediction based on crack forming inclusions in a high strength alloy steel / P.S. Shame, B.M. Hillberry, and B.A. Craig -- Section III: Applications -- Preliminary results of the United States nuclear regulatory commissions pressurized thermal shock rule reevaluation project / T.L. Dickson, P.T. Williams, B.R. Bass, and M.T. Kirk -- Corrosion risk assessment of

aircraft structures / M. Liao and J.P. Komorowski -- A software framework for probabilistic fatigue life assessment of gas turbine engine rotors / R. Craig Mcclung, M.P. Enright, H.R. Millwater, G.R. Leverant, and S.J. Hudak, Jr -- Application of probabilistic fracture mechanisms in structural design of magnet component parts operating under cyclic loads at cryogenic temperatures / M. Yatomi, A. Nyilas, A. Portone, C. Sborchia, N. Mitchell, and K. Nikbin -- A methodology for assessing fatigue crack growth in reliability of railroad tank cars / W. Zltao, M.A. Sutton, and J. Pena -- Effect of individual component life distribution on engine life prediction / E.V. Zaretsky, R.C. Hendricks, and S.M. Soditu.

| Sommario/riassunto | As fatigue and fracture mechanics approaches are used more often for determining the useful life and/or inspection intervals for complex structures, realization sets-in that all factors are not well known or characterized. Indeed, inherent scatter exists in initial material quality and in material performance. Furthermore, projections of component usage in determination of applied stresses are inexact at best and are subject to much discrepancy between projected and actual usage. Even the models for predicting life contain inherent sources of error based on assumptions and/or empirically fitted parameters. All of these factors need to be accounted for to determine a distribution of potential lives based on combination of the aforementioned variables, as well as other factors. The purpose of this symposium was to create a forum for assessment of the state-of-the-art in incorporating these uncertainties and inherent scatter into systematic probabilistic methods for conducting life assessment. |