

PHILOSOPHIES OF STRUCTURAL
SAFETY AND RELIABILITY



VLADIMIR RAIZER • ISAAC ELISHAKOFF



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Philosophies of Structural Safety and Reliability

Vladimir Raizer, FC&T Corporation, USA and **Isaac Elishakoff**, Florida Atlantic University, USA

Uncertainty is certain to be found in structural engineering, making it crucial to structure design. This book covers three competing philosophies behind structural safety and reliability: probabilistic analysis, fuzzy set-based treatments, and the convex approach.

Explaining the theory behind probabilistic analysis, fuzzy set-based treatments, and the convex approach in detail, alongside their implementation, use, and benefits, the book compares and contrasts these methods, enabling the reader to solve problems associated with uncertainty. These uncertainty issues can be seen in civil engineering structures, risk of earthquakes, impact of rough seas on ships, and turbulence affecting aerospace vehicles. Building on the authors' many years of experience in the field, *Philosophies of Structural Safety and Reliability* is an essential guide to structural uncertainty. Topics covered in the book include properties of materials and their structural deterioration, safety factor and reliability, risk evaluation and loads, and their combinations.

This book will be of interest to students and professionals in the fields of aerospace, civil, mechanical, marine, and ocean engineering.

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