Schriftenreihe des DFG Graduiertenkollegs 1462 Modellqualitäten
Themen: Ingenieurwesen • englisch

Igor Kavrakov

Synergistic Framework for Analysis and Model Assessment in Bridge Aerodynamics and Aeroelasticity

Wind-induced vibrations often represent a major design criterion for long-span bridges. This work deals with the assessment and development of models for aerodynamic and aeroelastic analyses of long-span bridges. Computational Fluid Dynamics (CFD) and semi-analytical aerodynamic models are employed to compute the bridge response due to turbulent and laminar free-stream. A comparative methodology is introduced for qualitative and quantitative model assessment, based on Category Theory and comparison metrics for time-histories, respectively. Moreover, two advances on the CFD front are presented, including a Turbulent Pseudo-3D Vortex Method and a method for determination of the complex aerodynamic admittance. The applications include both fundamental examples and practical case studies.

Das ebook dieses Titels ist OPEN ACCESS und für jeden kostenlos zugänglich.

Bauhaus-Universitätsverlag
1. Auflage 2020
Band 21 Schriftenreihe des DFG Graduiertenkollegs 1462 Modellqualitäten
Softcover
21×29,7cm • 1186 g
314 Seiten
177 figures, graphics & tables partly in color
Buchausgabe (D): 68,00 €
ISBN: 978-3-95773-284-2

Bauhaus-Universitätsverlag als Imprint von arts + science weimar GmbH
Eselsweg 17 | 99510 Ilmtal-Weinstraße | Tel.: 03643 8303-0 | Fax: 03643 8303-13
E-Mail: info@asw-verlage.de | Web: www.asw-verlage.de