

Super-long span bridge aerodynamics: on-going results of the TG3.1 benchmark test – Step 1.2

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1 Abstract

This paper is part of a series of publications aimed at the divulgation of the results of the 3-step benchmark proposed by the IABSE Task Group 3.1 to define reference results for the validation of the software that simulate the aeroelastic stability and the response to the turbulent wind of super-long span bridges. Step 1 is a numerical comparison of different numerical models both a sectional model (Step 1.1) and a full bridge (Step 1.2) are studied. Step 2 will be the comparison of predicted results and experimental tests in wind tunnel. Step 3 will be a comparison against full scale measurements.

The results of Step 1.1 related to the response of a sectional model were presented to the last IABSE Symposium in Nantes 2018. In this paper, the results of Step 1.2 related to the response long-span full bridge are presented in this paper both in terms of aeroelastic stability and buffeting response, comparing the results coming from several TG members.

Keywords: benchmark; aeroelasticity; flutter; buffeting; long-span bridge.