

Super-long span bridge aerodynamics benchmark: additional results for TG3.1 Step 1.2

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Abstract

This paper presents the ongoing benchmark results of IABSE Task Group 3.1. The task of this working group is to create benchmark results for the validation of methodologies and software programs developed to assess the stability and the buffeting response of long span bridges. Indeed, accurate estimations of structural stability and response to strong winds are critical for the successful design of long-span bridges. While the first results of the benchmark, dealing with a section approach, have been already published, in this paper the ongoing activity and results of the task group are presented. The topic of these results is the numerical response of a full-bridge model under the actions of a multi-correlated wind field both in terms of aeroelastic stability and buffeting response.

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