



## Super-Long Span Bridge Aerodynamics: First Results of the Numerical Benchmark Tests from Task Group 10

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### Abstract

The IABSE Task Group 10 (super-long span bridge aerodynamics) has the mandate to create a standard procedure for validation of methodology and software programs applied for stability and buffeting response analyses of super-long span bridges. Precise estimations of structural stability and response to strong winds are critical for the successful design of long-span bridges.

Task Group 10 covers several important problems related to its mandate including: review and verification of methods developed and adopted by researchers and bridge designers; the definition of guidelines and sample tests for verification and calibration of analytical procedures; identification of fundamental problems of the computation methods; relevant input and output data.

Since the beginning of its work, this working group has developed a 3-step benchmark, with multiple sub-steps of fundamental problems to resolve. The first step of this benchmark has been a numerical comparison of the results obtained using different models adopted across the workgroup members. Using the same inputs: flutter stability and the buffeting response of both a deck sectional model and a full bridge are studied. Step 2 will be the comparison of predicted