# Quality Assessment Methods for Experimental Models in Structural Engineering

Experimental and numerical models are required in order to reliably assess the safety and usability of both newly constructed and existing structures. The quality of both numerical and experimental models must be evaluated in order to reliably predict structural behaviour and design. Many statements about the quality of a simulation model can only be validated by including the appropriate experiments e.g. the quantification of the statistical uncertainties of model input parameters during the calibration of the confidence level estimator model, which is dependent heavily on the definition of the experiment and the quality of its implementation. Metrological aspects should therefore be used in order to guarantee the equivalence of results between different laboratories and evaluate the measurement or simulation result with its specifications. However, methodology for quantitatively assessing the implementation and results of experimental models is lacking.
This work presents methods for assessing the quality of different materials used in structural engineering and monitoring models.


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