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*Abstract*

A design strategy based on integration of the building form and structure with its external environment in order to take advantage of natural forces (wind and buoyancy effects) has been evaluated in terms of risk and reliability measures. Tools for the probabilistic analysis (First-Order Reliability Method (FORM), Monte Carlo) have been presented and applied in the probabilistic modelling and sensitivity analysis of the response function of the studied building physics problem. Sensitivity analysis of the influence of basic random variables on the probability distribution of a response function is straightforward in FORM methodology...