Corrigendum

Corrigendum to “A New Uncertain Analysis Method for the Prediction of Acoustic Field with Random and Interval Parameters”

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In the article titled “A New Uncertain Analysis Method for the Prediction of Acoustic Field with Random and Interval Parameters” [1], the methods proposed are similar to those in the authors’ other article [2] and in Wu et al. [3]. Because the method in [1] is not new, the title should be changed to “Hybrid Uncertain Analysis Method for the Prediction of Acoustic Field.” The authors’ other article [2] was not cited because the paper [1] was submitted later and accepted earlier. The authors read Wu et al.’s study [3] after submitting, but due to an oversight a citation was missing. Wu et al. should have been cited as reference [46].

The methods proposed in [1, 2] both combine the polynomial chaos method and the response surface method, but there are some differences. Firstly, the ways to build the relationship between the coefficients of polynomial chaos and interval variables are different. Secondly, the results are different. In [1], the method is not only employed to obtain the bounds of response of acoustic systems with both random and interval uncertainties, but also the map of the probability distribution of the response. In [2], the method is employed not only to obtain the frequency response of structural-acoustic systems with both random and interval uncertainties but also to address the case with only random or only interval uncertainty without reconstructing the Polynomial Chaos Response Surface method (PCRS) algorithm. Finally, the study [1] concerns acoustics, which is different from the structural-acoustic systems in [2].

In [1], an uncertain method is employed for the prediction of an acoustic field with hybrid uncertainties. In [3], a hybrid

method is proposed combining the polynomial chaos method with the Chebyshev inclusion function theory. Both methods employ polynomials to approximate the original complicated model with random and interval uncertainties. Based on the approximated polynomial model, some evaluation indexes can be obtained. The process of constructing the polynomial model is similar in some aspects, but the study [1] differs from Wu et al.’s study [3] in many other aspects. Firstly, the interval bases of the methods are totally different. The interval bases employed in [3] is the Chebyshev inclusion function, which can reduce the overestimation to a great extent. While in [2], the response surface methodology is used due to its simplicity and ease of use. Secondly, the collocation points of the methods are different. In addition, the field of [3] is vehicle dynamics, which is different from acoustic systems in [1]. Finally, the results are also different. In [3], besides the bounds evaluation with interval variables, the bounds evaluation with random variables are also an important part. In [1], the proposed method is employed to obtain not only the bounds of response of acoustic systems with both random and interval uncertainties but also the map of the probability distribution of the response.

References

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