

Accepted Manuscript

An arbitrary polynomial chaos expansion approach for response analysis of acoustic systems with epistemic uncertainty

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PII: S0045-7825(17)30775-2
DOI: <https://doi.org/10.1016/j.cma.2017.12.025>
Reference: CMA 11717

To appear in: *Comput. Methods Appl. Mech. Engrg.*

Received date : 11 June 2017
Revised date : 20 December 2017
Accepted date : 22 December 2017

Please cite this article as: S. Yin, D. Yu, Z. Luo, B. Xia, An arbitrary polynomial chaos expansion approach for response analysis of acoustic systems with epistemic uncertainty, *Comput. Methods Appl. Mech. Engrg.* (2017), <https://doi.org/10.1016/j.cma.2017.12.025>

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- A new epistemic uncertainty analysis method is proposed by integrating evidence theory and arbitrary polynomial chaos.
- The arbitrary polynomial is obtained based on the three-term relation of the monic orthogonal polynomials.
- The Gaussian quadrature formula is introduced to calculate the coefficient of arbitrary polynomial expansion
- The merit of the proposed method has been demonstrated by comparing it with the conventional evidence-theory-based polynomial chaos expansion methods.

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