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

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Highlights (for review)

- 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.