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Dual interval-and-fuzzy analysis method for temperature prediction with hybrid epistemic uncertainties via polynomial chaos expansion

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Highlights

1. A novel dual-stage analysis framework is constructed for response prediction with hybrid epistemic uncertainties.
2. Application of interval theory and fuzzy theory can simplify the modeling of epistemic uncertainty characterization.
3. Legendre polynomial chaos expansion is employed as the surrogate model for system response.
4. Clenshaw-Curtis point-based collocation methods are proposed to calculate the polynomial expansion coefficients.