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Uncertainty analysis for structures with hybrid random and interval parameters using mathematical programming approach

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Highlights

- A unified perturbation mathematical programming (UPMP) approach is proposed.
- Random and interval uncertainties are simultaneously considered in this study.
- Both nodal displacement and elemental force are analysed by UPMP approach.
- Uncertain-but-bounded statistical characteristics are efficiently captured via NLP.
- Interval dependency issue is completely eliminated from the algorithm

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