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Nondeterministic dynamic stability assessment of Euler-Bernoulli beams using Chebyshev surrogate model

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Highlights:

- A novel computational framework for nondeterministic dynamic buckling of beam-column structures was presented;
- Chebyshev surrogate model was used to handle the dynamic buckling governing equation by approximate performance function;
- The validity, accuracy, applicability of the proposed approach was rigorously verified by benchmark methods and cases;
- The proposed method can better help optimization design of beam-columns structures under dynamic loadings.

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