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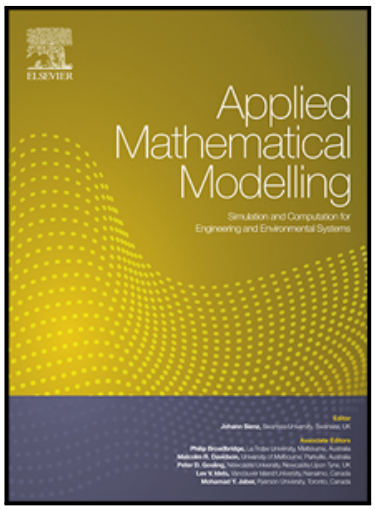

Enhanced sequential approximate programming using second order reliability method for accurate and efficient structural reliability-based design optimization

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Highlights

- The sequential approximate programming (SAP) is enhanced using SORM for RBDO.
- The proposed enhanced SAP-based SORM has the same efficiency as well as the FORM-based RBDO.
- ESAP is applied several nonlinear, applicable RBDO problems and reliability-based topology optimization.
- Results demonstrated that the ESAP shows the superiority of performance compared to RIA, PMA, SAP, and SORA.

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