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An efficient -robust structural reliability method by adaptive finite-step length based on Armijo line search

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Highlights

- A finite-based Armijo search direction (FAL) is proposed to improve robustness of FORM formula.
- The finite-step size is adjusted using the Armijo rule and the sufficient descent condition.
- The FAL method is compared with several reliability methods through five structural reliability problems.
- Proposed FAL is more robust and efficient than the existing reliability methods.

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