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Efficient reliability analysis based on adaptive sequential sampling design and cross-validation

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Highlights

- A new learning function based on cross validation is proposed as a guideline to select training sample points.
- A weighted minimum Euclidean-distance is proposed to avoid clustering of sample points.
- The epistemic and aleatory uncertainties are considered simultaneously by the proposed learning function.
- Most of the selected sample points reside in the high reliability sensitive regions and far away from each other.
- The proposed method is effective for structural systems with expensive-to-evaluate simulations.

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