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## Model-based energy and uncertainty analysis of membrane bioreactor to treat PVC production site wastewater

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### Highlights:

- ASM1 was calibrated and validated for a MBR to treat PVC production wastewater.
- The calibrated ASM1 can reasonably simulate MBR in steady and dynamic states.
- A modified aeration energy model incorporating MLSS concentration was proposed.
- Latin Hypercube Sampling was applied to judge the reliability of operation strategy.
- The current operation can ensure the effluent  $\text{NH}_4\text{-N}$  below  $2 \text{ mg L}^{-1}$  for 97 % chance.

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