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Generalised parameter estimation and calibration for biokinetic models using correlation and single variable optimisations: Application to sulfate reduction modelling in anaerobic digestion

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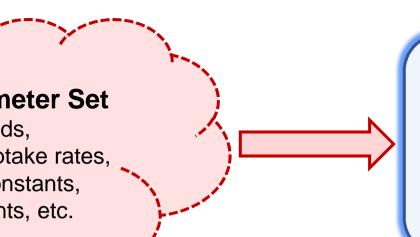
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1. Correlation and Heuristics based Estimation

- Use of thermodynamic correlations, mass balances, etc.
- Reduces the number of parameters for calibration

Fully determined Parameter Set

2. Sensitivity based Hierarchical and Sequential Single-Parameter Optimisation Scheme

- Use of one dimensional (1D) optimisation by calibrating each parameter one by one
- Hierarchisation using two sensitivity-based criteria (impact and ubiquity) to determine the parameter priority for 1D optimisation
- Advantages:
 - Avoids identifiability issues commonly observed with multi-dimensional calibrations
 - Significantly reduces computation efforts

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