

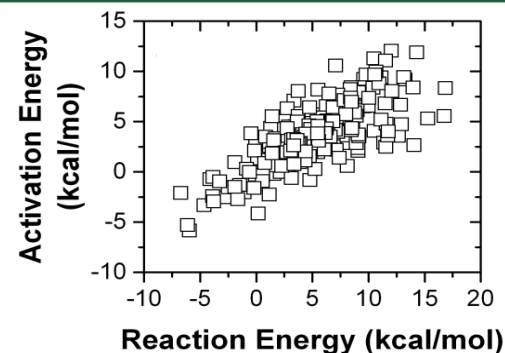
Predictive Models for Biomass Processing

Scientific Achievement

Developed a method that accounts for the first time for correlations between parameters of first-principles models and quantifies their effect on the predictive ability of a model.

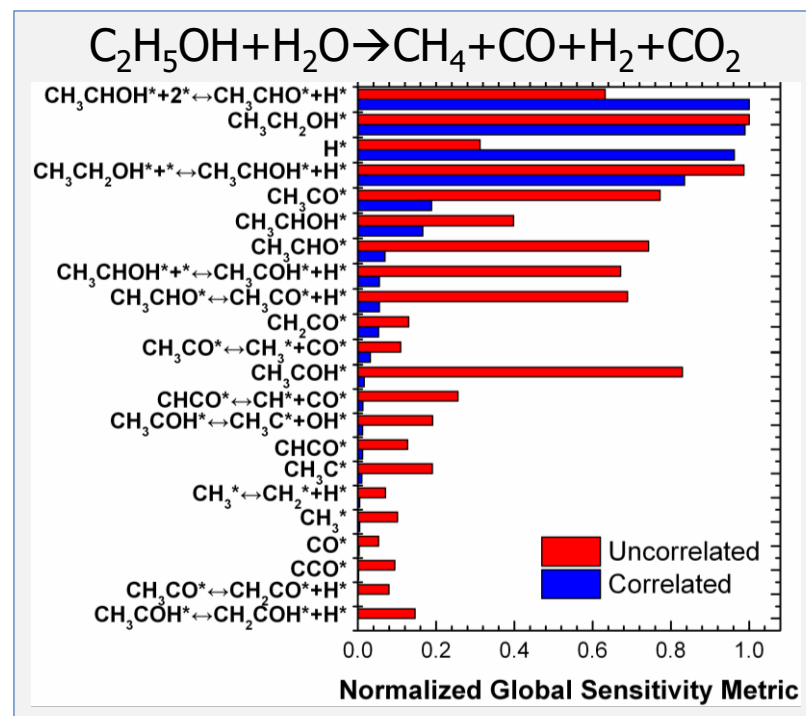
Significance and Impact

- First principles models have errors and their predictive ability has been unknown. The development of correlative uncertainty quantification methods enables one to quantify the errors and improve models to render them predictive.



Research Details

- Quantified correlations of first-principles models
- Developed efficient global sensitivity and uncertainty quantification methods
- Applied to complex networks of biomass processing
- Demonstrated how important correlations are and how to render models predictive



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Work was performed at the University of Delaware by the group of Vlachos

