Comparison of WRTDS and GAMs for evaluating long-term trends in chlorophyll

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Since the last call...

- Application of GAMs and WRTDS to 20 year time series of monthly chlorophyll at LE1.2 and TF1.6

- Development of comparable methods for model fitting

- Development of simulated datasets to evaluate flow-normalization

- Comparison of results and conclusions

Model fitting and flow-normalization

Objective: compare RMSE of model fits

Problem: Need methods to prevent over-fitting and to compare apples-to-apples

GAMs - identify optimal degrees of freedom for smoothing parameters

WRTDS - identify optimal window widths for time, discharge (salinity or flow), and season

Existing method for GAMs, cross-validation and search algorithm to identify window-widths for WRTDS

Basically, a statistical infrastructure to 'automatically' fit the best model given the dataset

Development of simulated datasets

Objective: evaluate ability of each model to reproduce
flow-normalized trends

Problem: The true flow-normalized trends are not known and can
only be empirically estimated

We created simulated datasets...