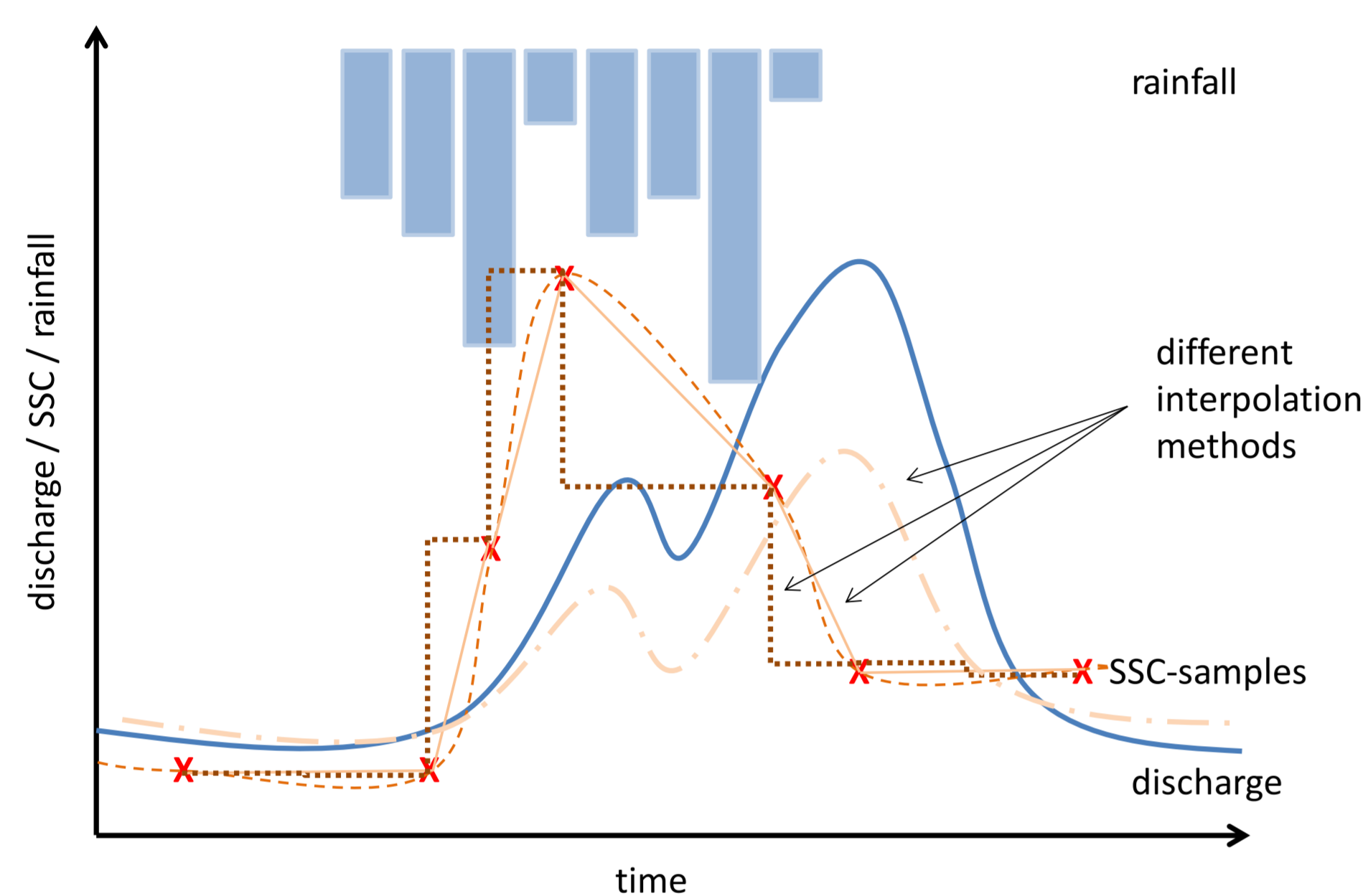


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The Challenge – intro & objectives

- Datasets on suspended sediment concentration (SSC) are often intermittent
- Yield calculations require interpolation of SSC.
- Many interpolation methods (IM) exist (see „The combatants“) but which one is the best?



Objective: Rank IM (→ contest), provide guidelines for selecting appropriate IM.

What constitutes a “good method”?

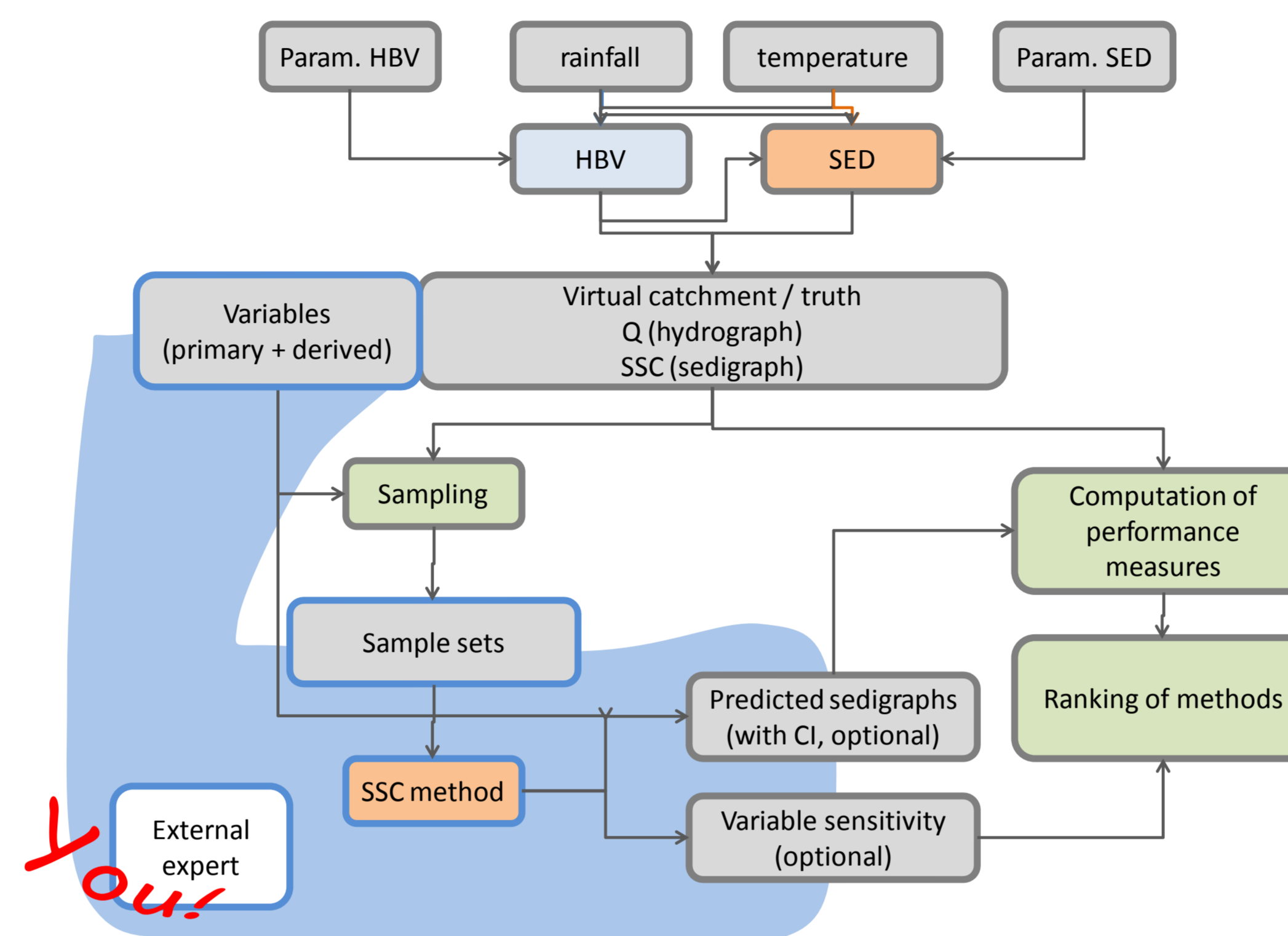
- accuracy and precision of prediction
- availability and accuracy of uncertainty estimates
- identification of important drivers among multiple explaining variables (predictors)
- ease of use

.....feel free to add your ideas here.....

→ These criteria depend on the problem characteristics

Arena & rules – methodology

Feeding IM with samples from ‘virtual catchment’ and comparing to “truth” (full sedigraphs)



Sampling of synthetic data with regard to:

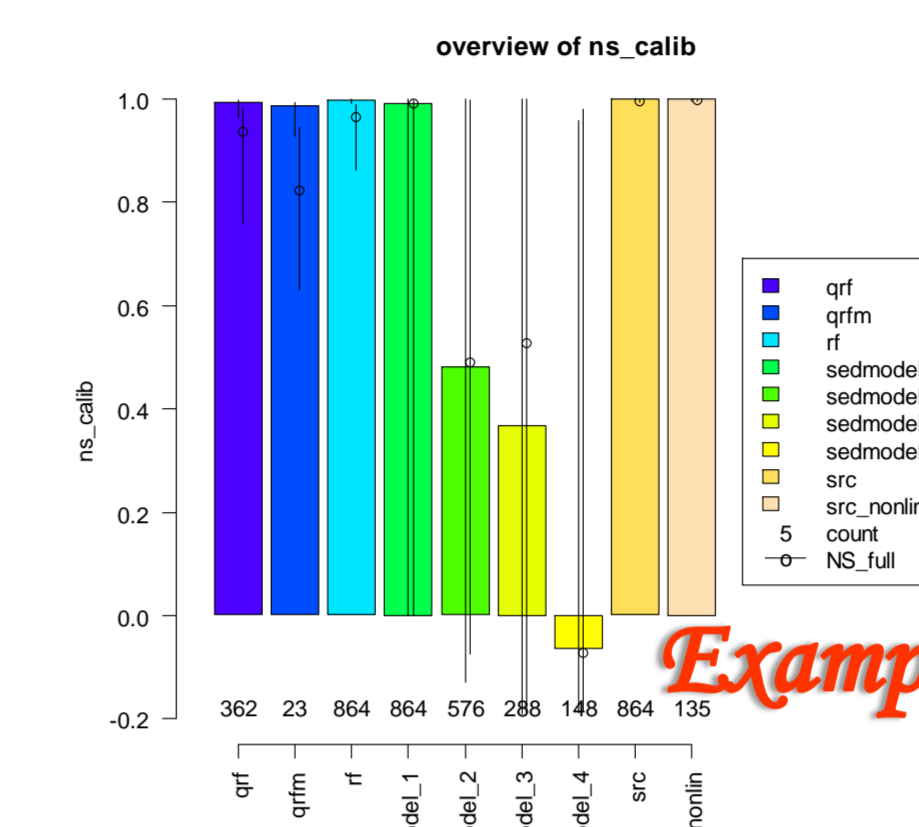
- hydrological regime #realisations sampled: 4
 - sediment regime 4
 - sample number 3
 - sample scheme 2
 - temporal extent 2
 - predictor selection 3
- Total #: 864 datasets
-[add your ideas here].....

The combatants – tested methods

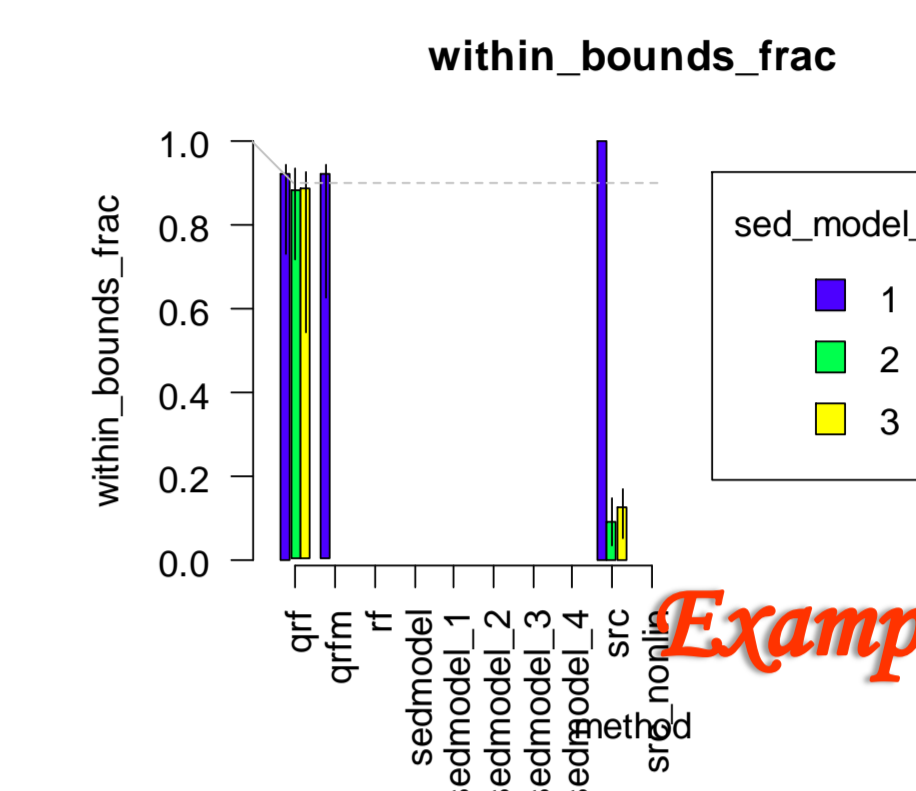
- traditional sediment rating curve (log-fit, non-lin fit)
 - SRC with quickflow separation, thresholded SRC
 - Generalized Linear Models
 - Random Forests **implemented**
 - Quantile Regression Forests
 - Conceptual sediment models used in sedigraph generation
 - Boosted regression trees **in progress**
 - Multiadaptive regression splines
 - Fuzzy Logic
 - Artificial Neural Networks
 -add your ideas here.....
 -contact or reference, if possible.....
- Your help welcome!**

Qualifying Race – results (preview)

Comparative analysis of...

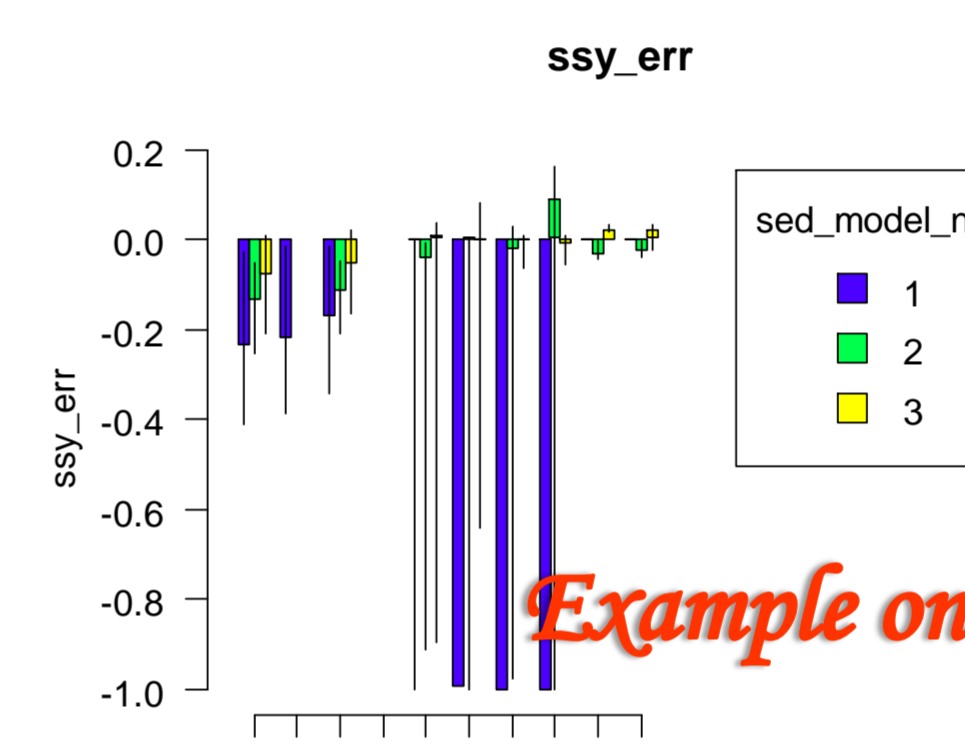


Example only!



Example only!

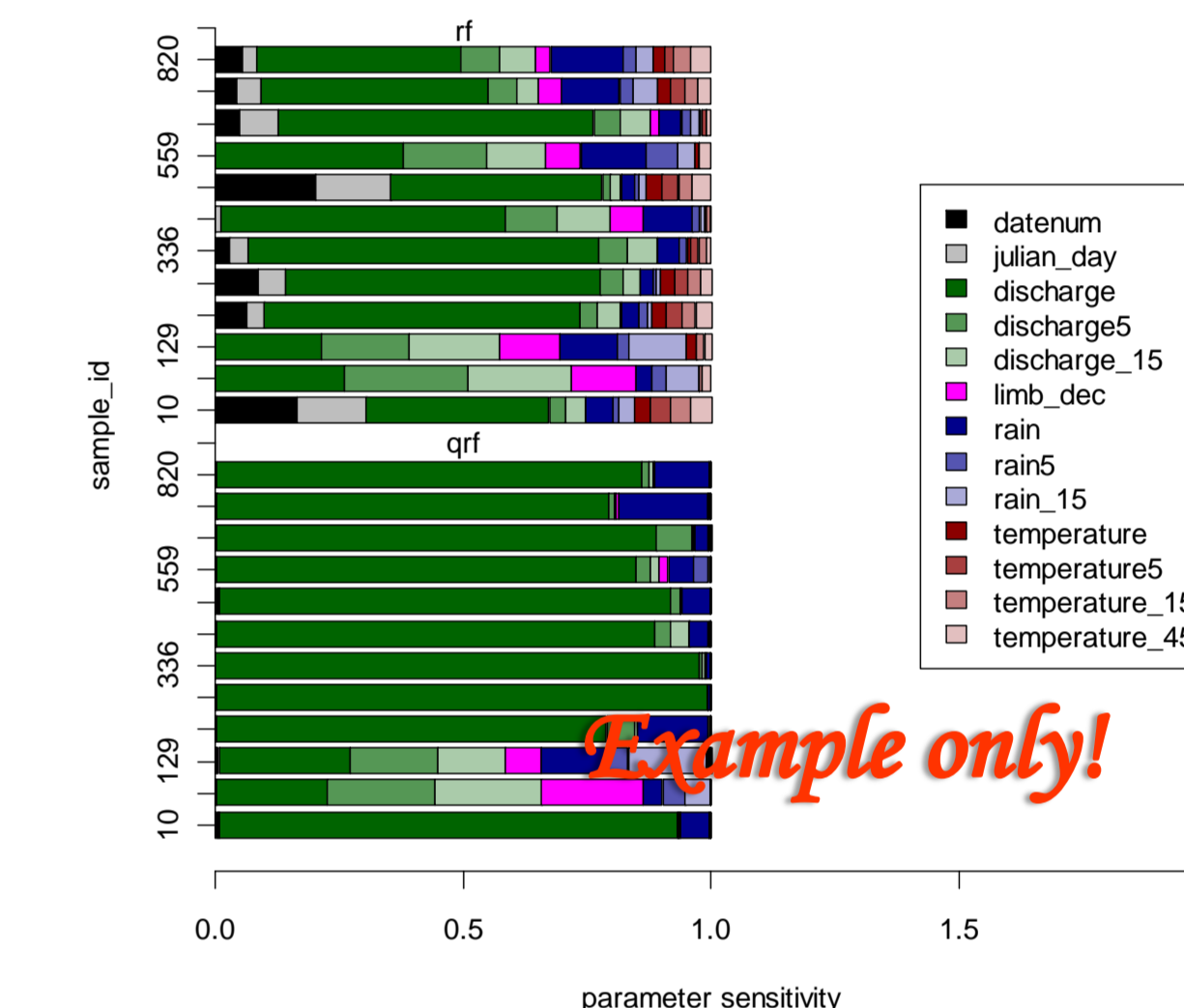
Nash-Sutcliffe indices



Example only!

Error in computed yield

Precision of uncertainty estimates



Example only!

We want you! – call for contribution

Join the contest!

- You have expertise on predicting / interpolating SSC-data
 - Your method can be automated (processing of 800+ datasets)
 - Your method can predict sedigraphs from long timeseries of predictors (i.e. 2 years in 5 min resolution)
 - Your computation resources can produce results within 2 months
- OR
- your can provide source code (to be run on our compute server)

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 francke@uni-potsdam.de