Supplementary Material

1 DATA

All data used in this study are added to this supplementary material. For each sub-basin a file with the suffix *tq.npy* and a file with the suffix *tq.npy* are available. The first file contains all used hydrographs, each stored in the rows of the file. The length of each hydrograph is (as described in the manuscript) 600 hours with the peak of the respective event is at timestamp t = 300. For each event start and end timestamps are stored in the second file. Both files are in the ”npy” format to minimize storage and loading times and can be handled with the (standard) python package ”numpy”.

2 SUPPLEMENTARY TABLES AND FIGURES

2.1 Figures

Result of the local application for all machine learning algorithms.

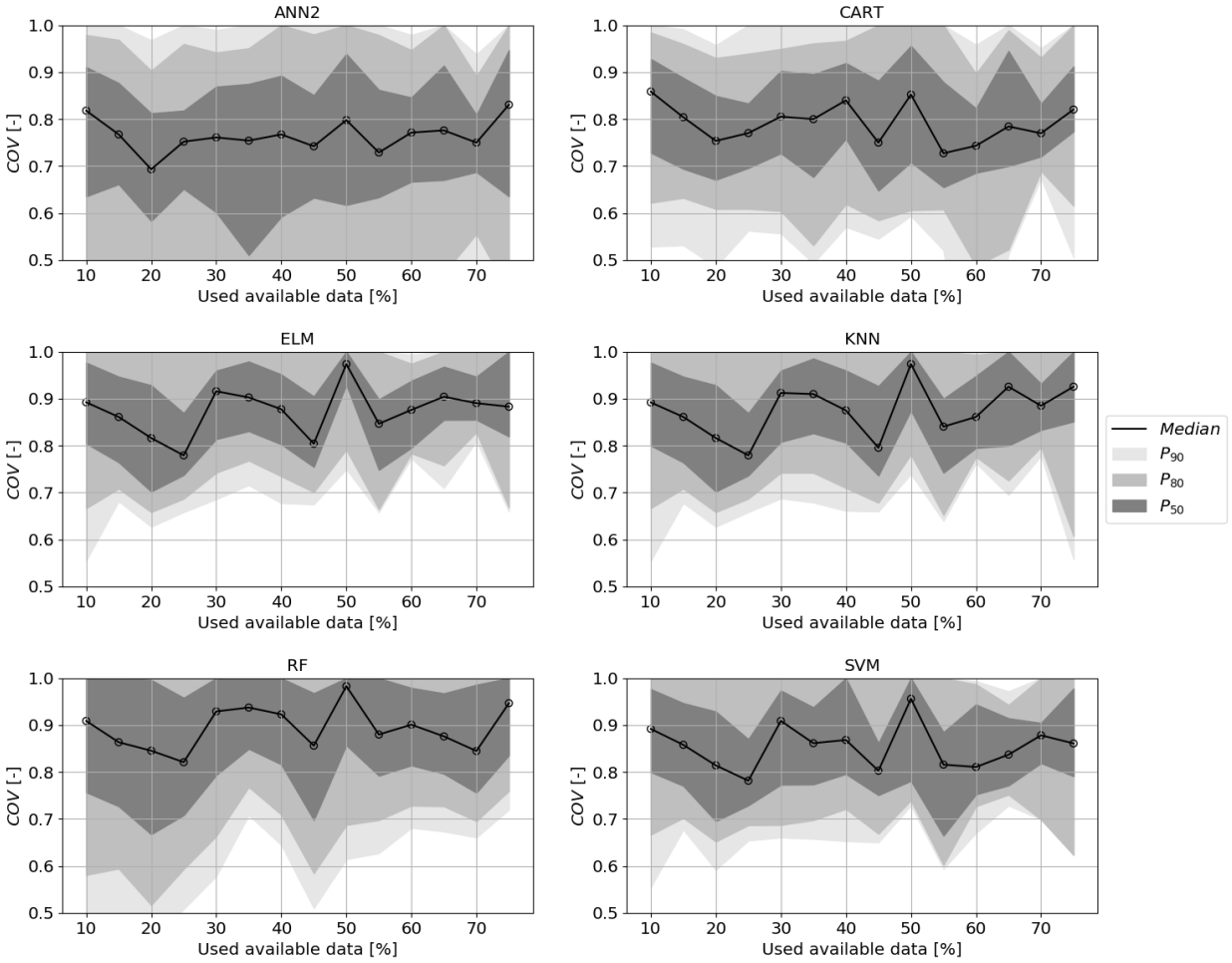

Figure S1. Dependence of temporal coverage (COV) and size of the training data set of a an artifical neuronal networt with 2-hidden layers (ANN2), regression tree (CART), extreme learning machine (ELM), k-nearest neighbour (KNN), random forest (RF) and support vector machine (SVM). Uncertainty belts drawn in grey scales for different probabilities (50%, 80%, 90%). The amount of training data has been raised incrementally to train the algorithms and were validated in each step with the same data set, containing 25% of the available data.

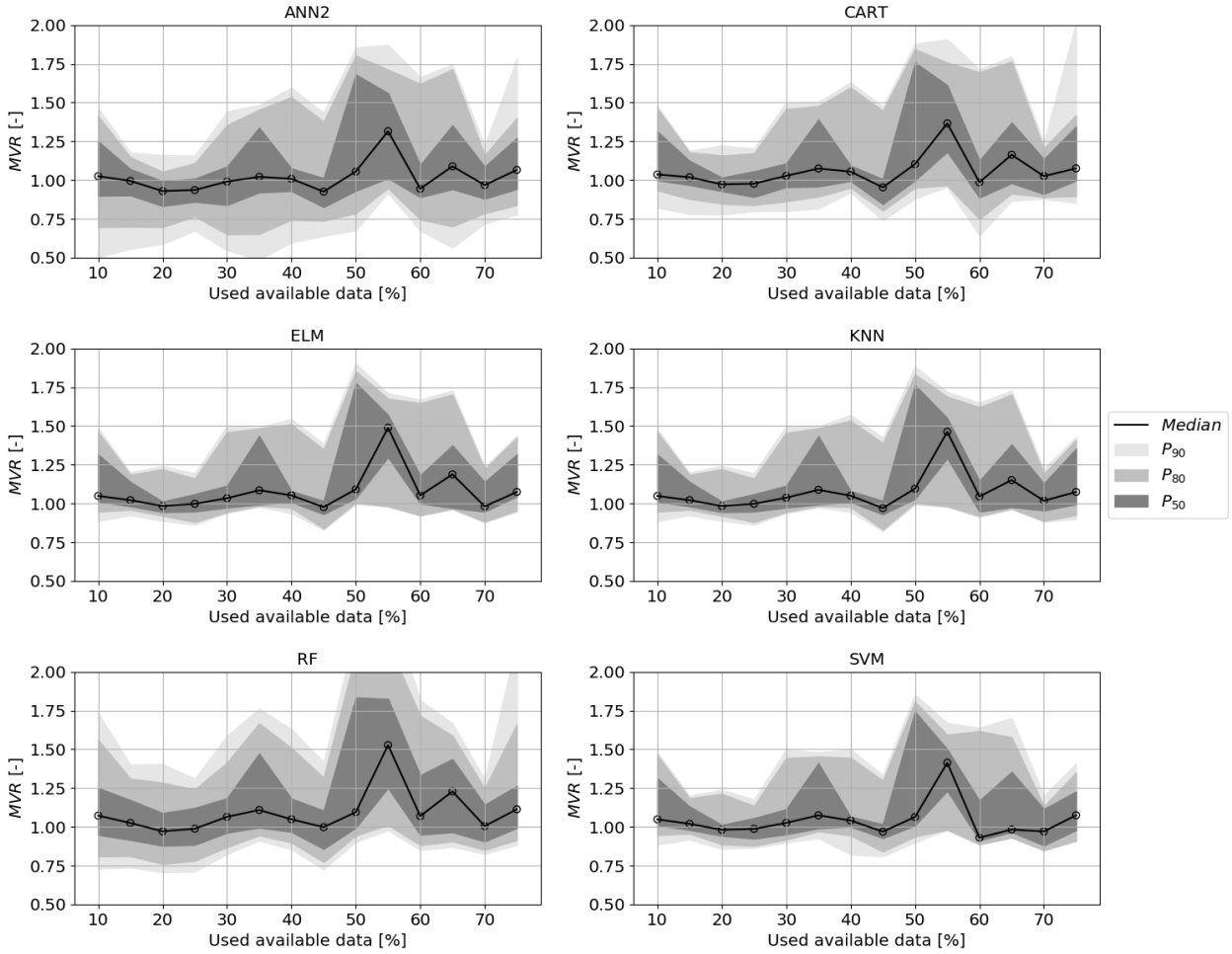

Figure S2. Dependence of mean volume reproduction (MVR) and size of the training data set of a an artifical neuronal networt with 2-hidden layers (ANN2), regression tree (CART), extreme learning machine (ELM), k-nearest neighbour (KNN), random forest (RF) and support vector machine (SVM). Uncertainty belts drawn in grey scales for different probabilities (50%, 80%, 90%). The amount of training data has been raised incrementally to train the algorithms and were validated in each step with the same data set, containing 25% of the available data.