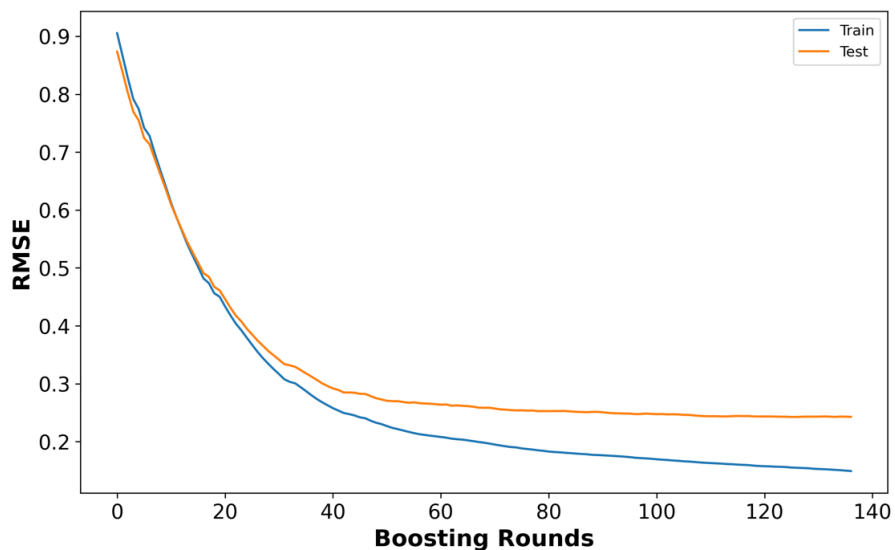
1 **SUPPLEMENT**

2 **Figure S1:** Training process monitoring RMSE for both training and validation sets.

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7 **Figure S2:** Relationship of N_2O and main environmental parameters A) Temperature (°C), B) Chlorophyll

8 a (Chla: µg L^{-1}) and C) salinity (psu) based on the generalized additive models applied. The black dots

9 represent residual concentrations in nmol L^{-1}. The inward tick marks on the horizontal axes show data

10 distributions. The model R^2 was 0.96 in the training set and explained 96 % of the response variable. *P*-

11 values for the terms in the model are <0.005 for Temperature and Chla and o.1390 for salinity.

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