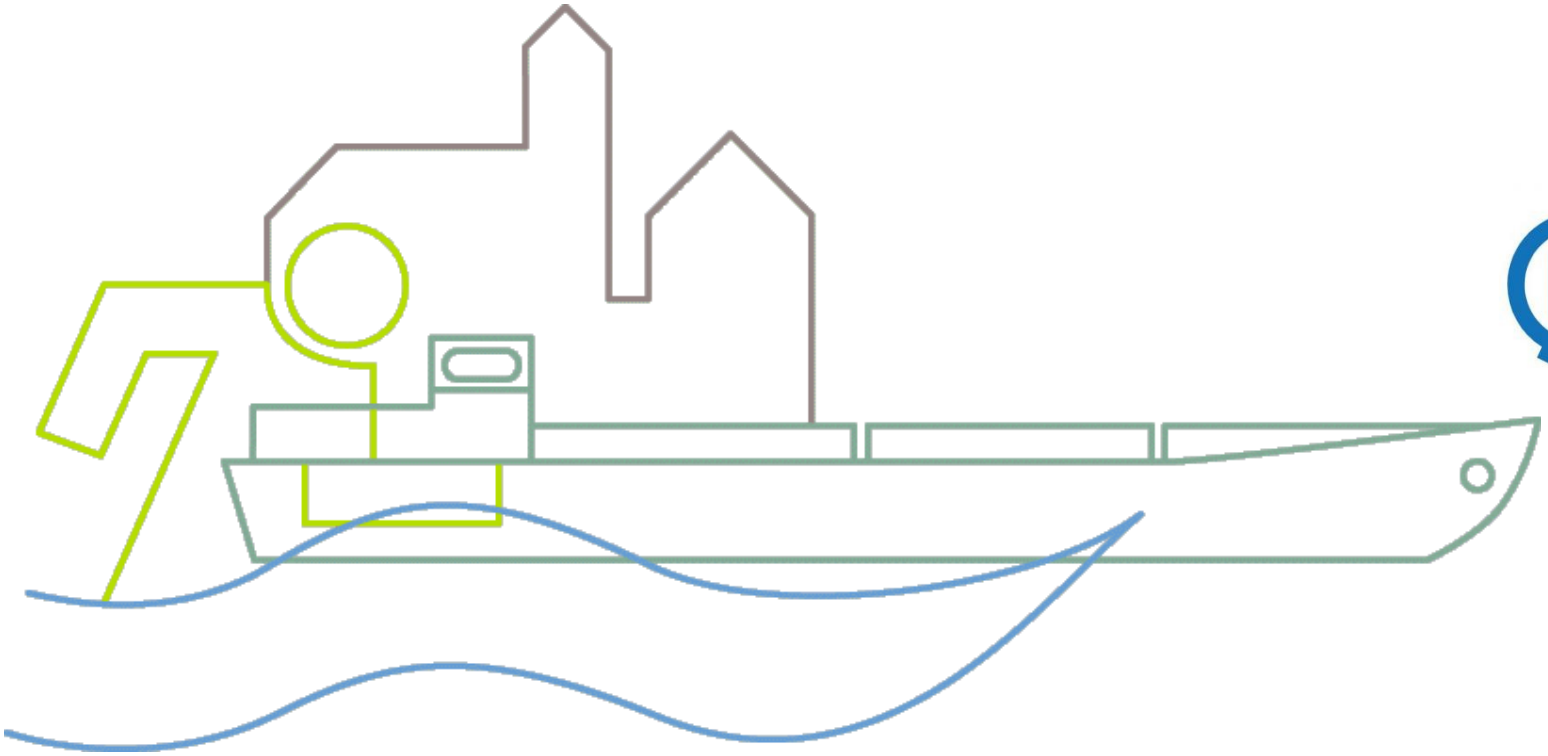

Vertical and lateral variability of suspended sediment in cross-sections at the river Rhine – Preliminary Results

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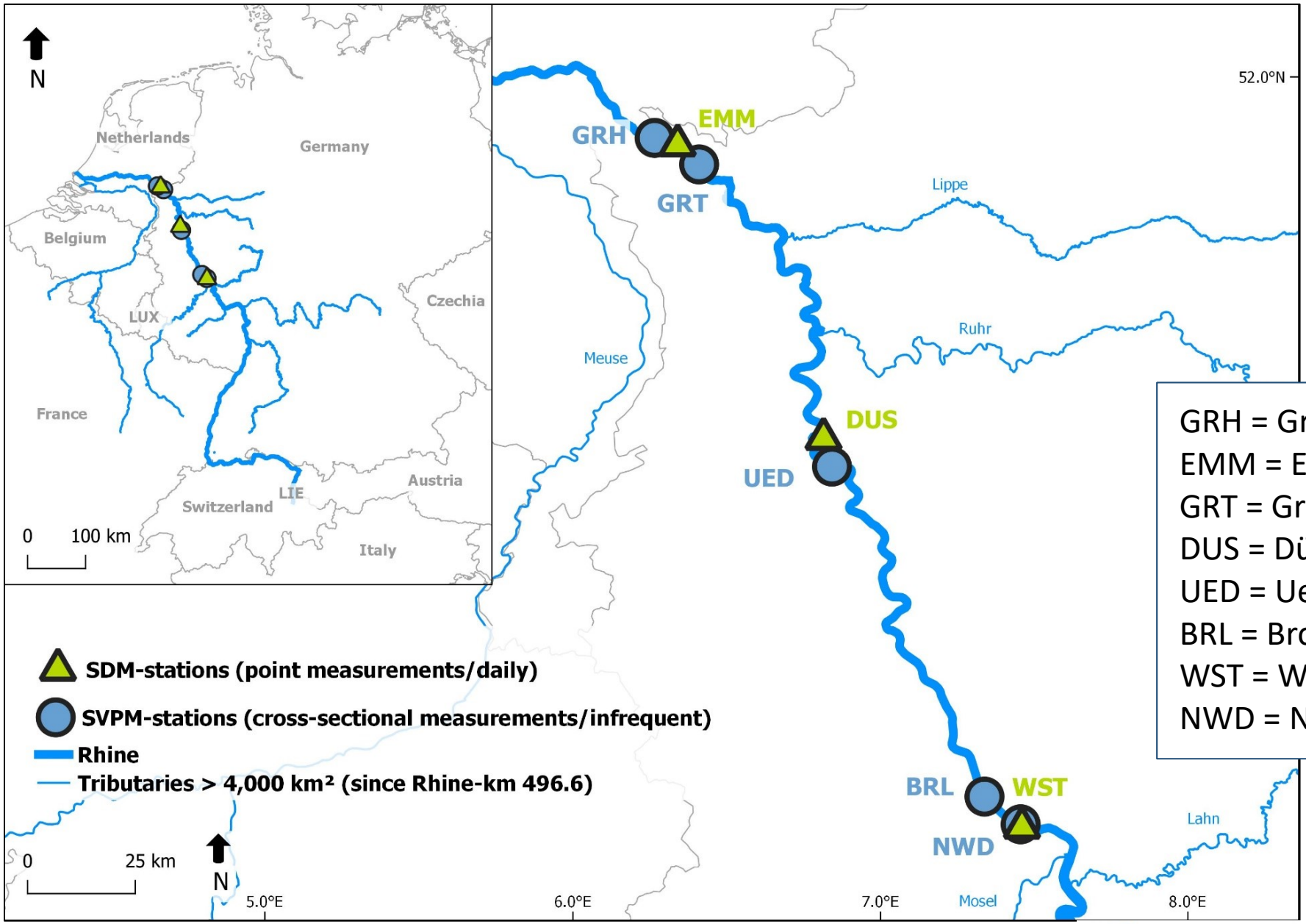
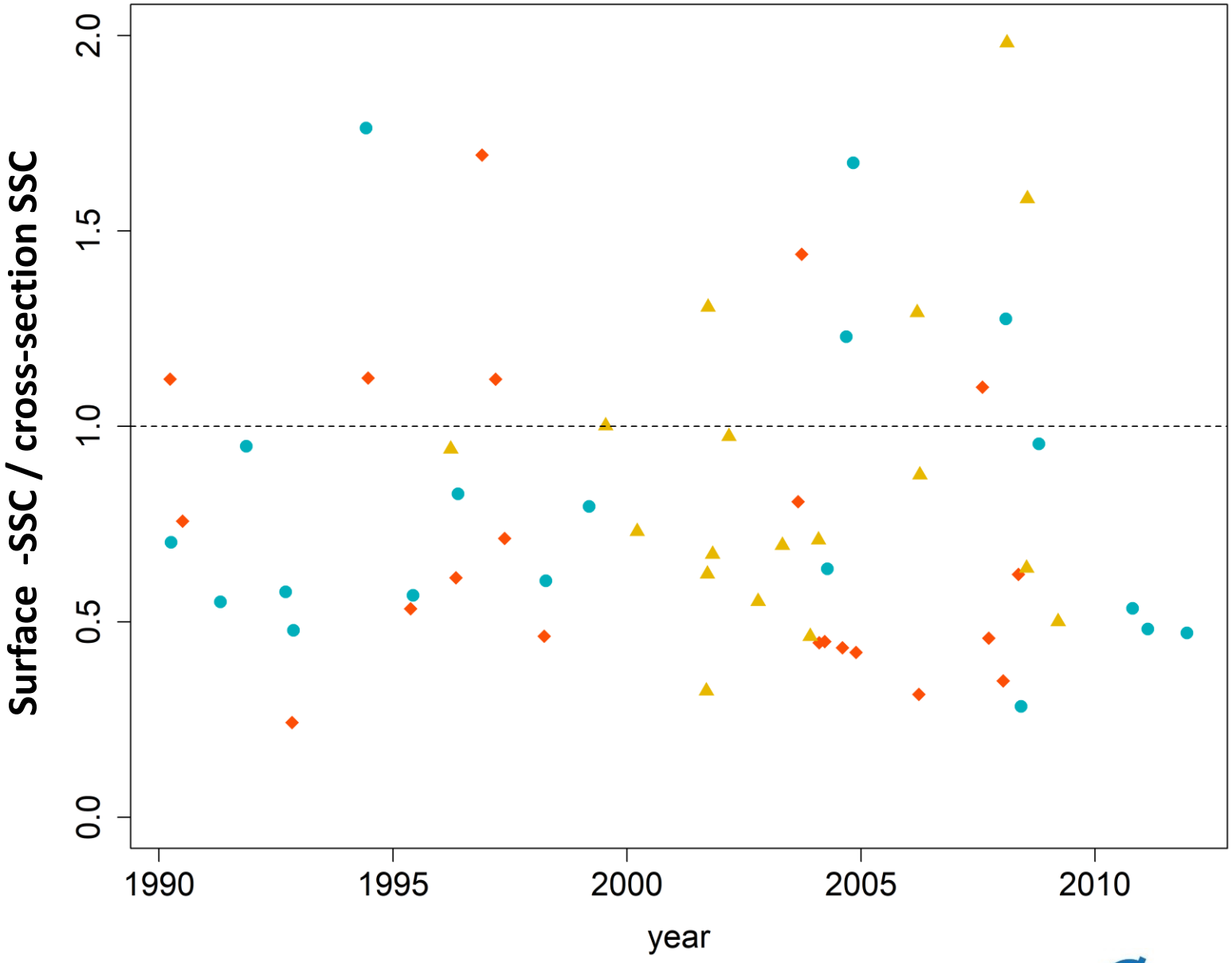
Study Area: Middle & Lower Rhine



GRH = Griethausen
EMM = Emmerich
GRT = Grieth
DUS = Düsseldorf
UED = Uedesheim
BRL = Brohl-Lützing
WST = Weißenthurm
NWD = Neuwied

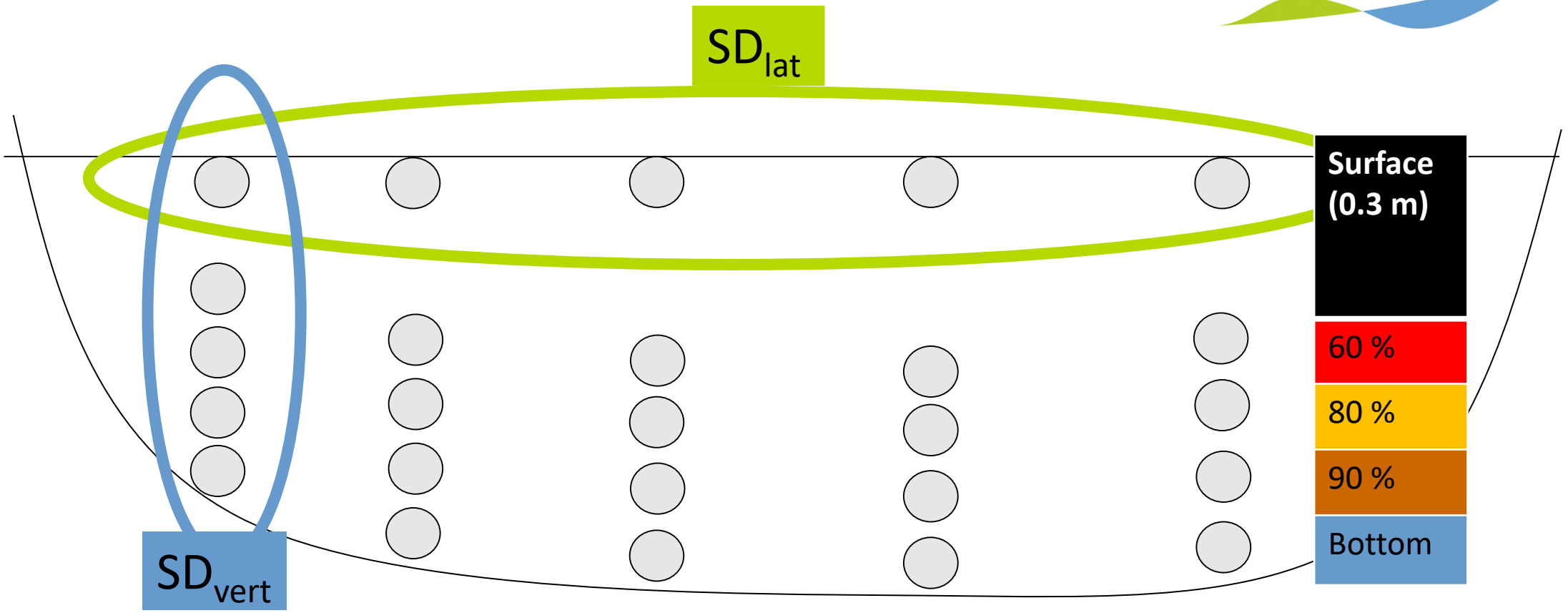
Underestimation of point-measurements



NWD/WST	0.88
UED/DUS	0.72
GRH/EMM	0.81

Vertical Variability

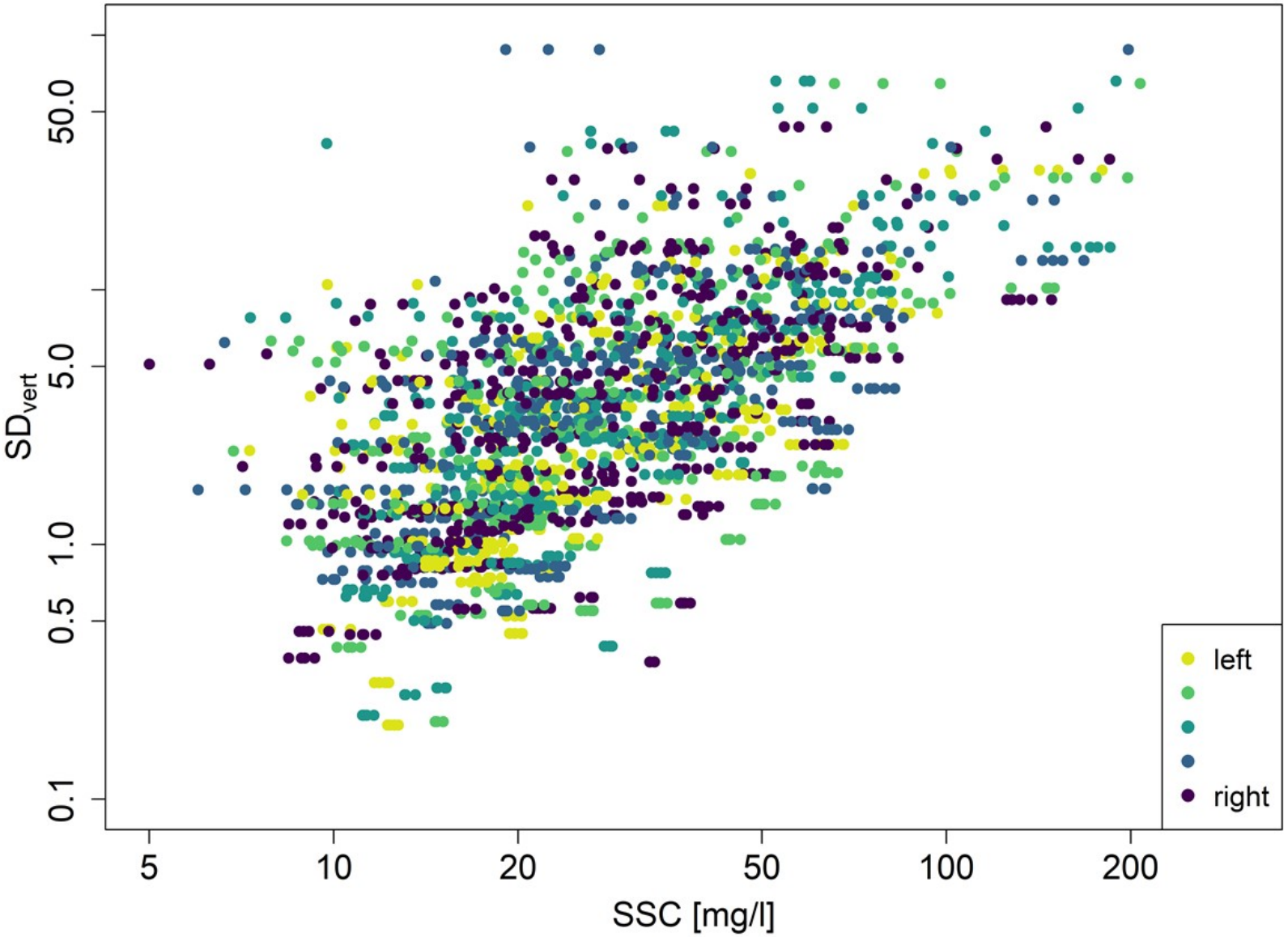
Lateral Variability



SD_{vert} = 5 SDs (SD_{L1-L5}) and mean over 5 verticals

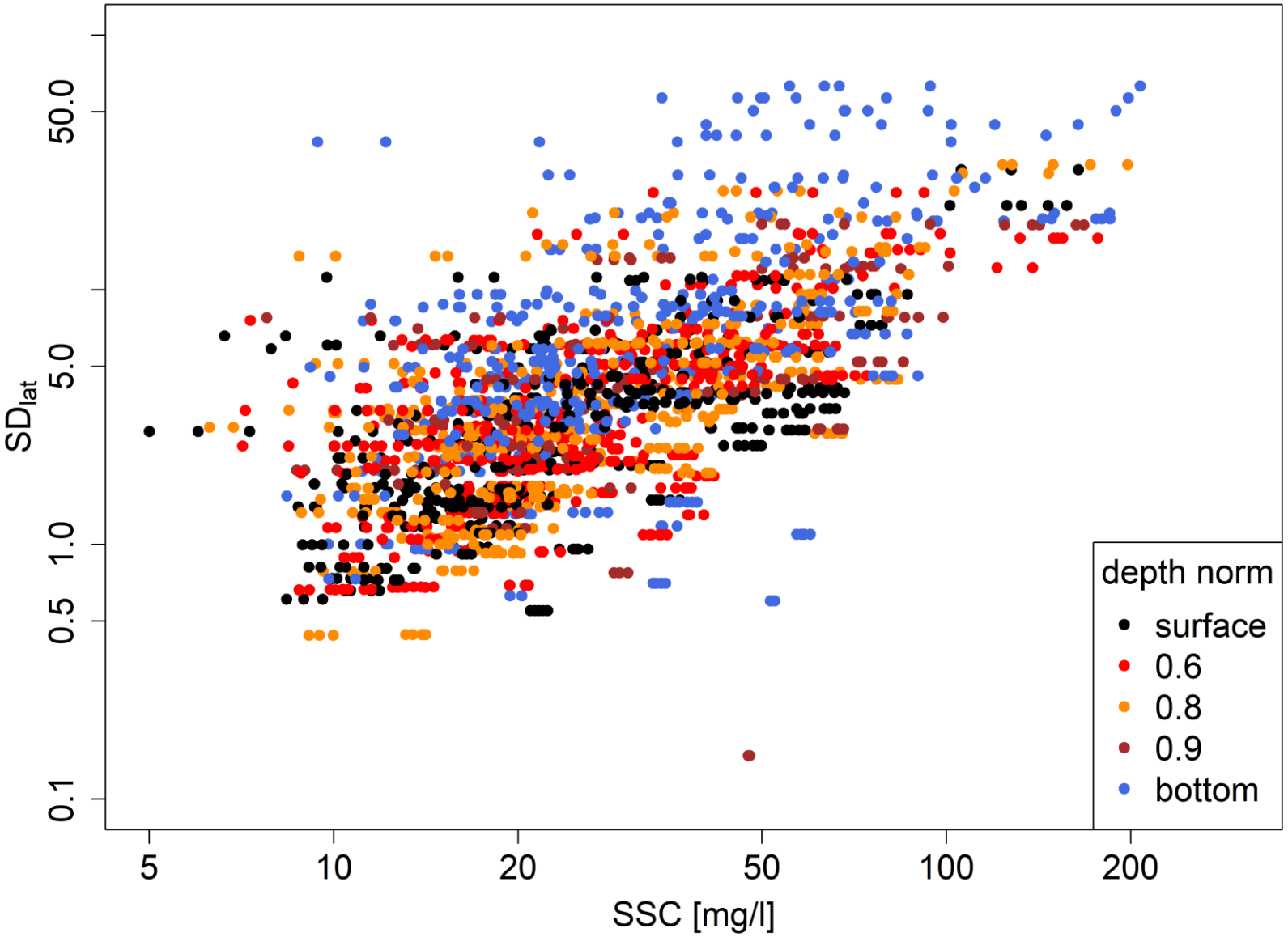
SD_{lat} = 5 SDs (SD_{V1-V5}) and mean over 5 depths

Vertical Variability

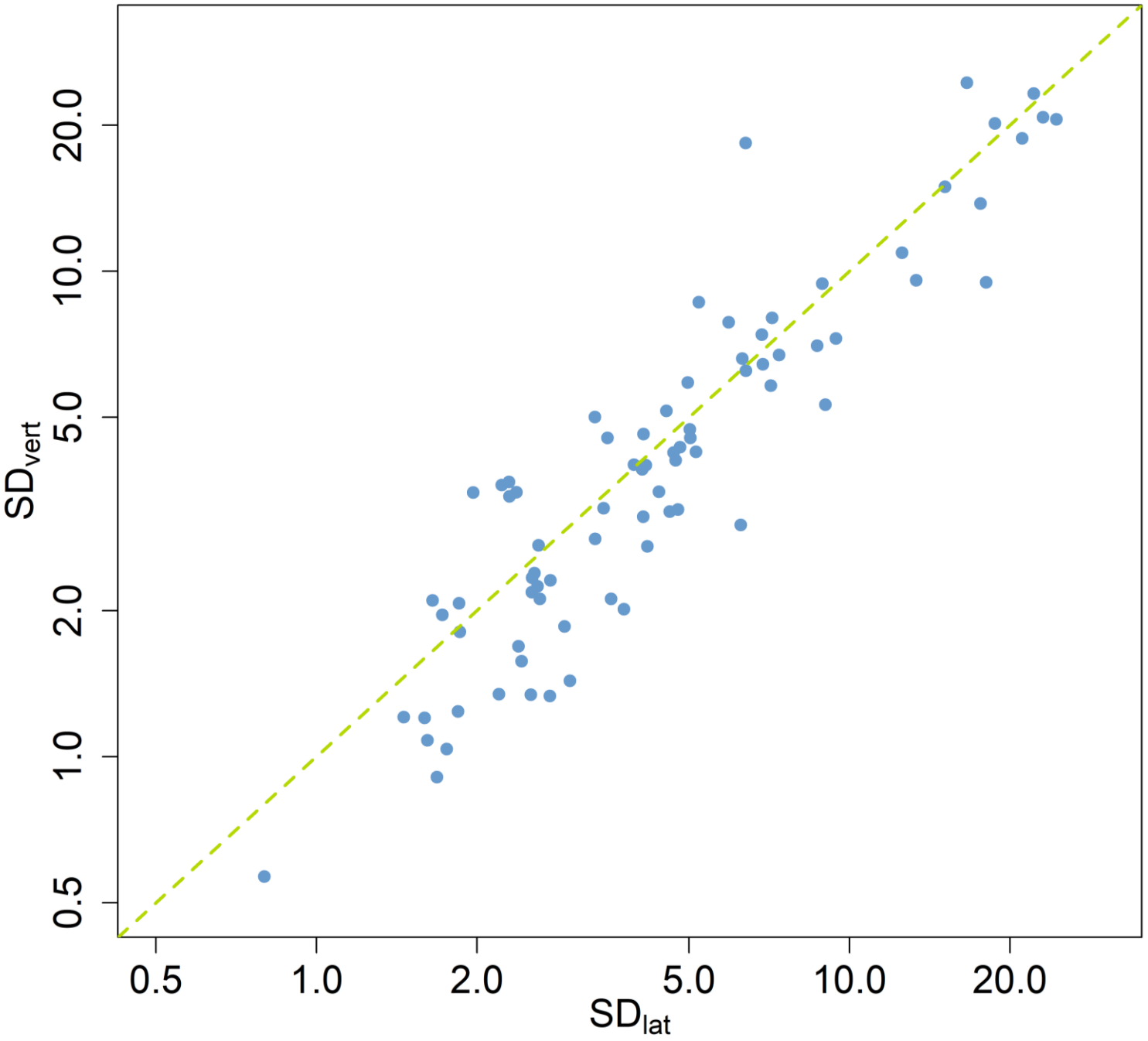


increase with SSC

Lateral Variability



increase with SSC



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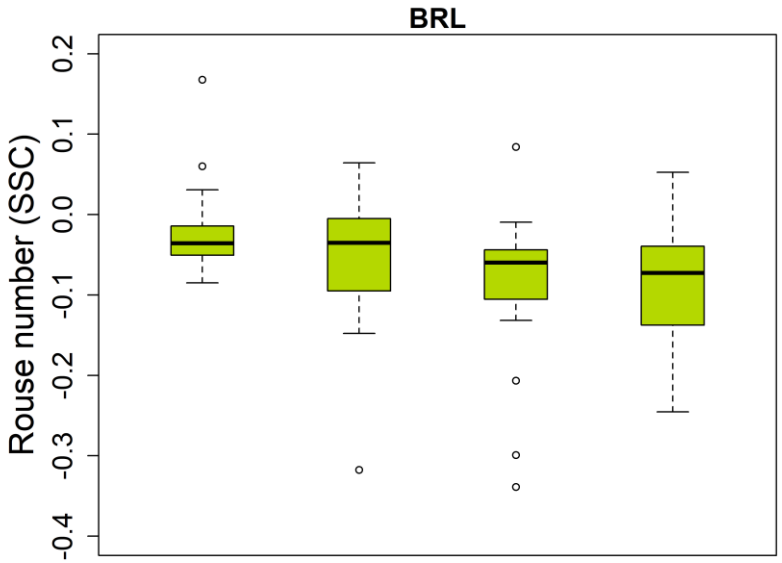
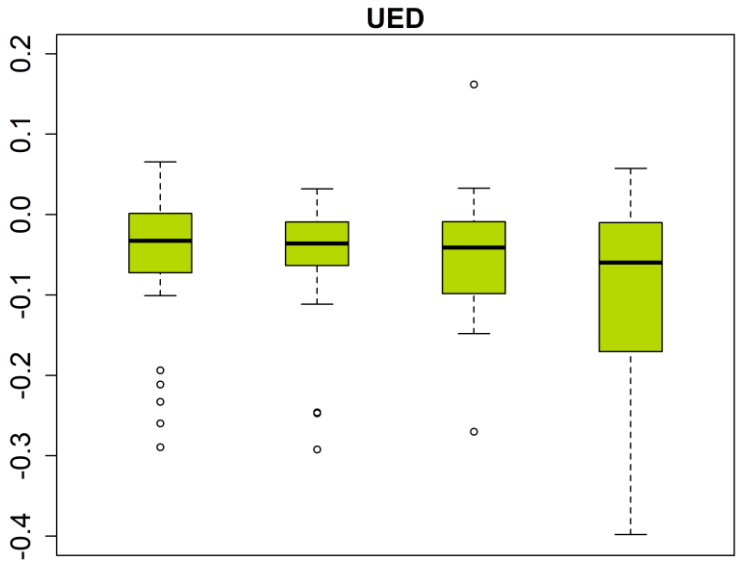
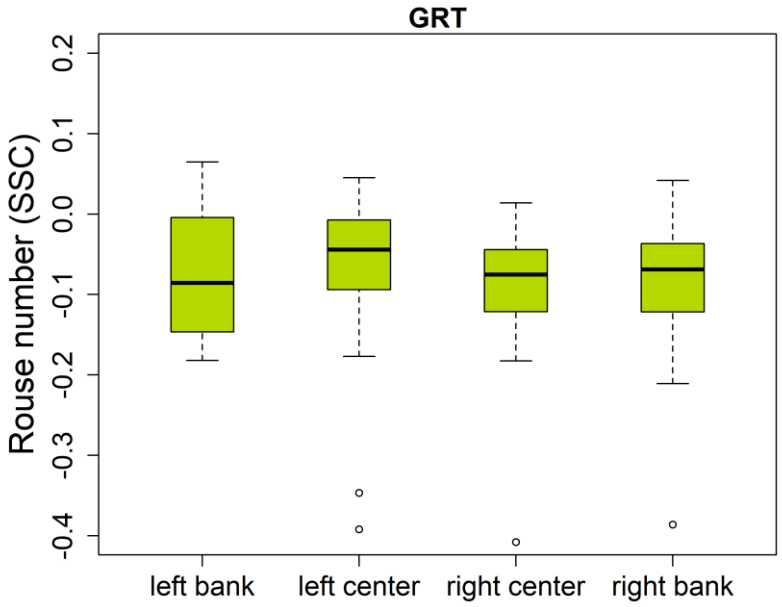
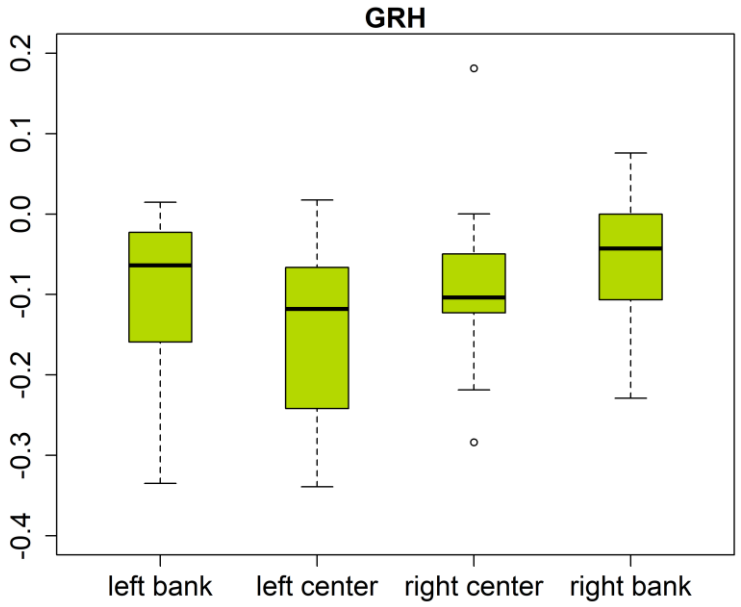
Vertical variability = lateral variability?









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Rouse equation over cross-section

Highlights

i. point-measurements underestimate suspended sediment load
ii. lateral variability equal to vertical variability
iii. Lateral variability of Rouse-coefficient

Outlook

i. investigate drivers of cross-sectional variability in the river Rhine
ii. reduce uncertainties, combine point- and cross-sectional data