Tereno Advisory Board Meeting Sept. 2001
Excursion: Rappbode Reservoir

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The Rappbode Reservoir Observatory

- located at Rappbode reservoir (Harz Mountains, Germany)
- Investment: about 500.000 €
- Countinuous monitoring of nutrient and carbon fluxes and corresponding ecosystem dynamics

Photo: André Künzelmann (UFZ)

Rappbode Reservoir

- One main reservoir and 3 pre-dams
- Drinking water supply for over 1 Mio people
- Surface area: 395 ha
- Volume: 113 Mio m^3
- Max. depth: 89 m
- mesotrophic

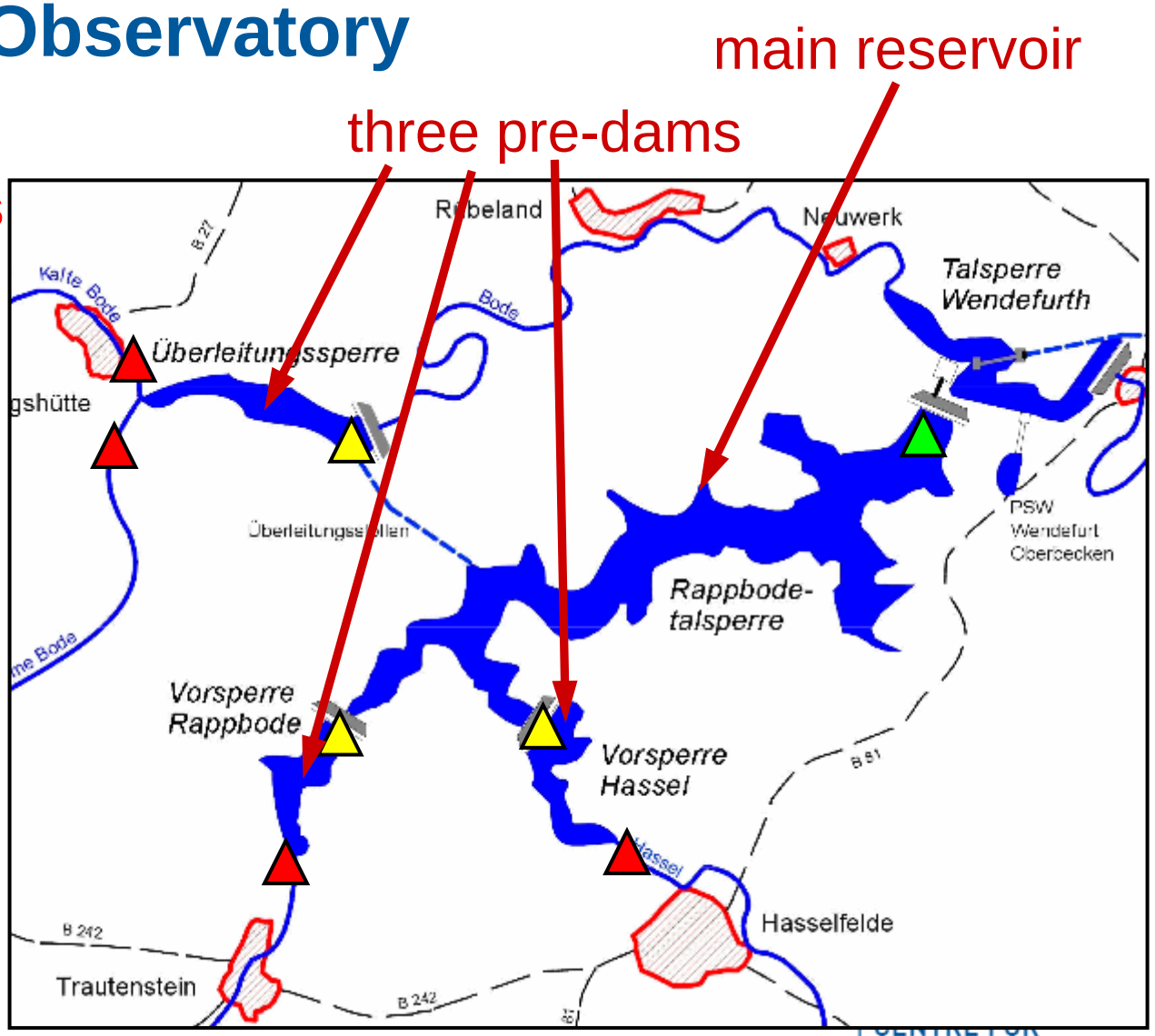
The Rappbode Reservoir Observatory

4 inflow stations

Real-time & continuous measurement of

- temperature
- conductivity
- turbidity
- nitrate
- DOC

and event-dependent water sampling by automated water samplers



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The Rappbode Reservoir Observatory

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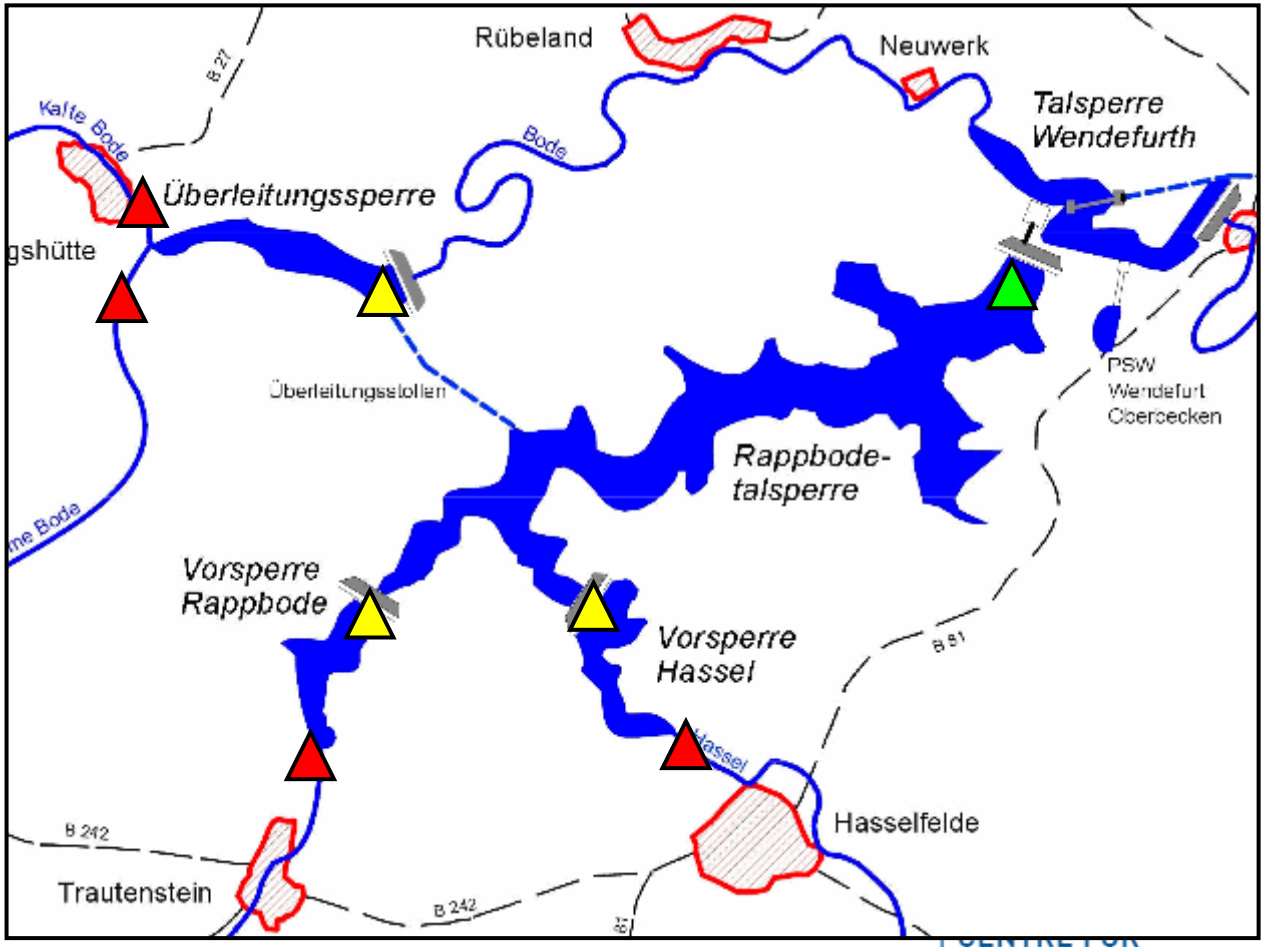
△ 3 connecting stations

Real-time & continuous measurement of

- temperature
- conductivity
- turbidity
- nitrate
- DOC
- oxygen
- chlorophyll



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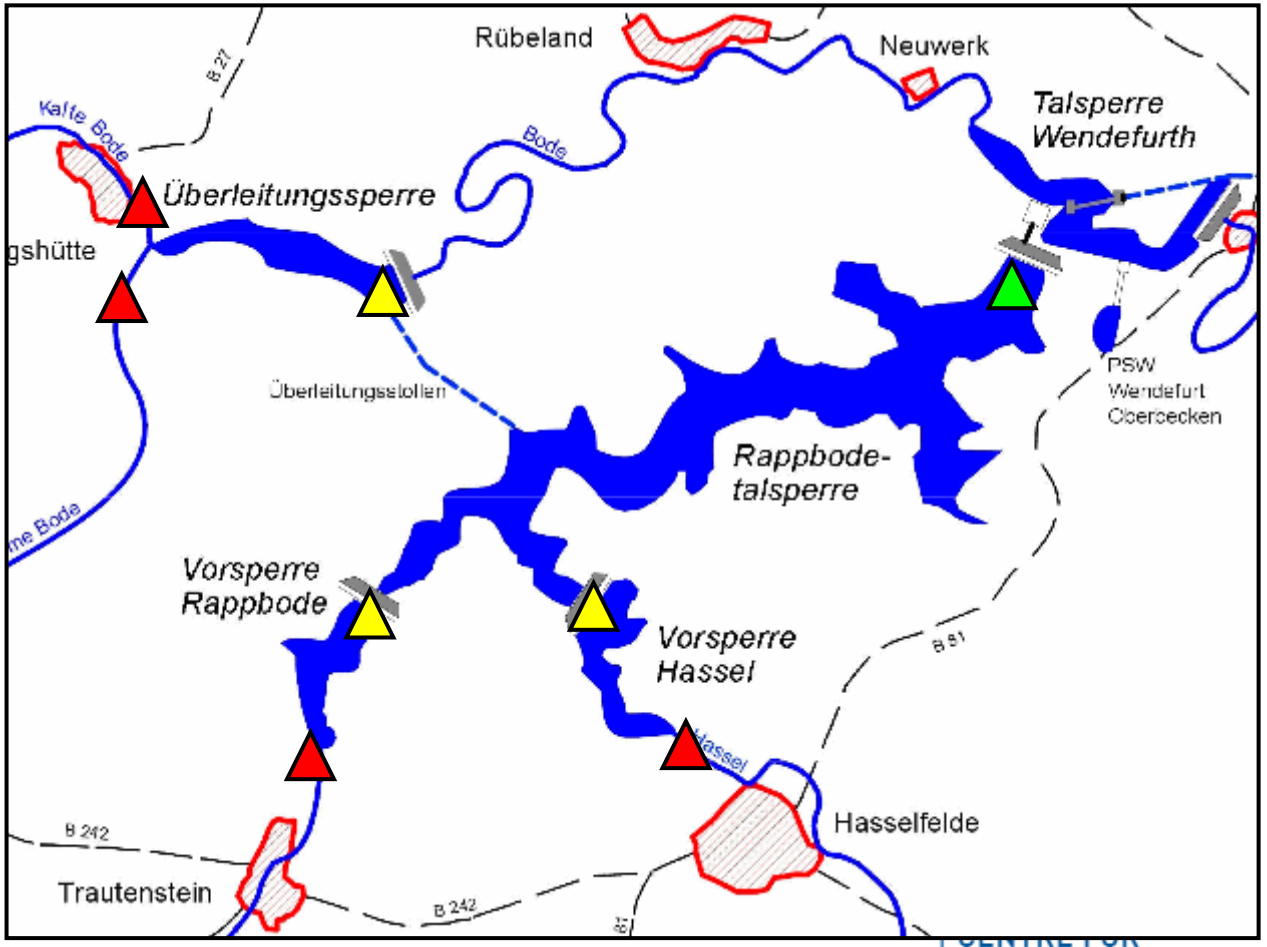
The Rappbode Reservoir Observatory

▲ 1 offshore station

Meteorological buoy (wind, temperature, humidity, radiation)

Real-time & continuous measurement of
- temperature
- conductivity
- turbidity
- nitrate
- DOC
- oxygen
- chlorophyll



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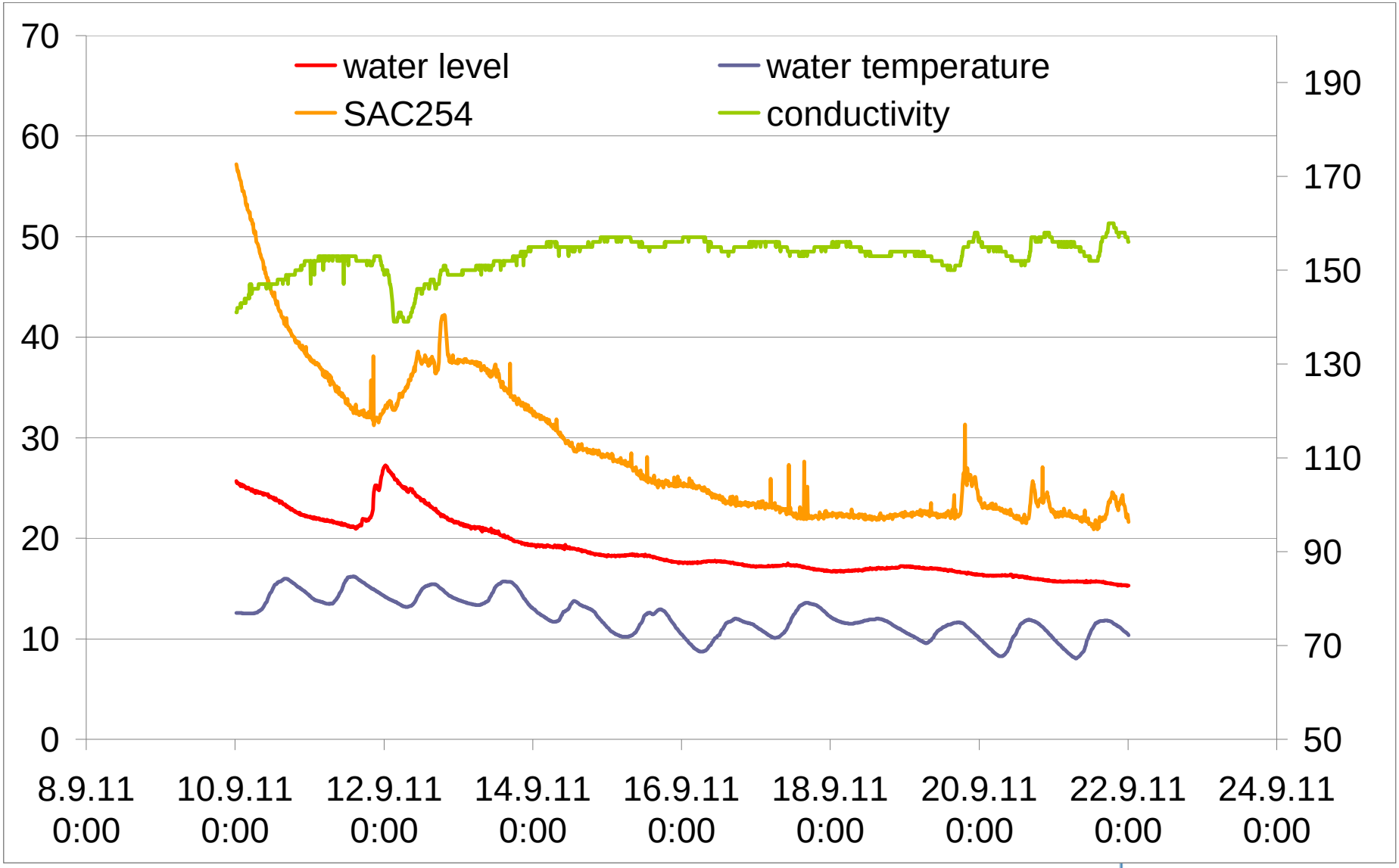
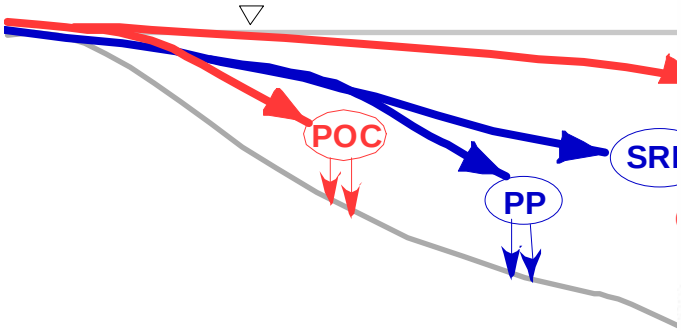
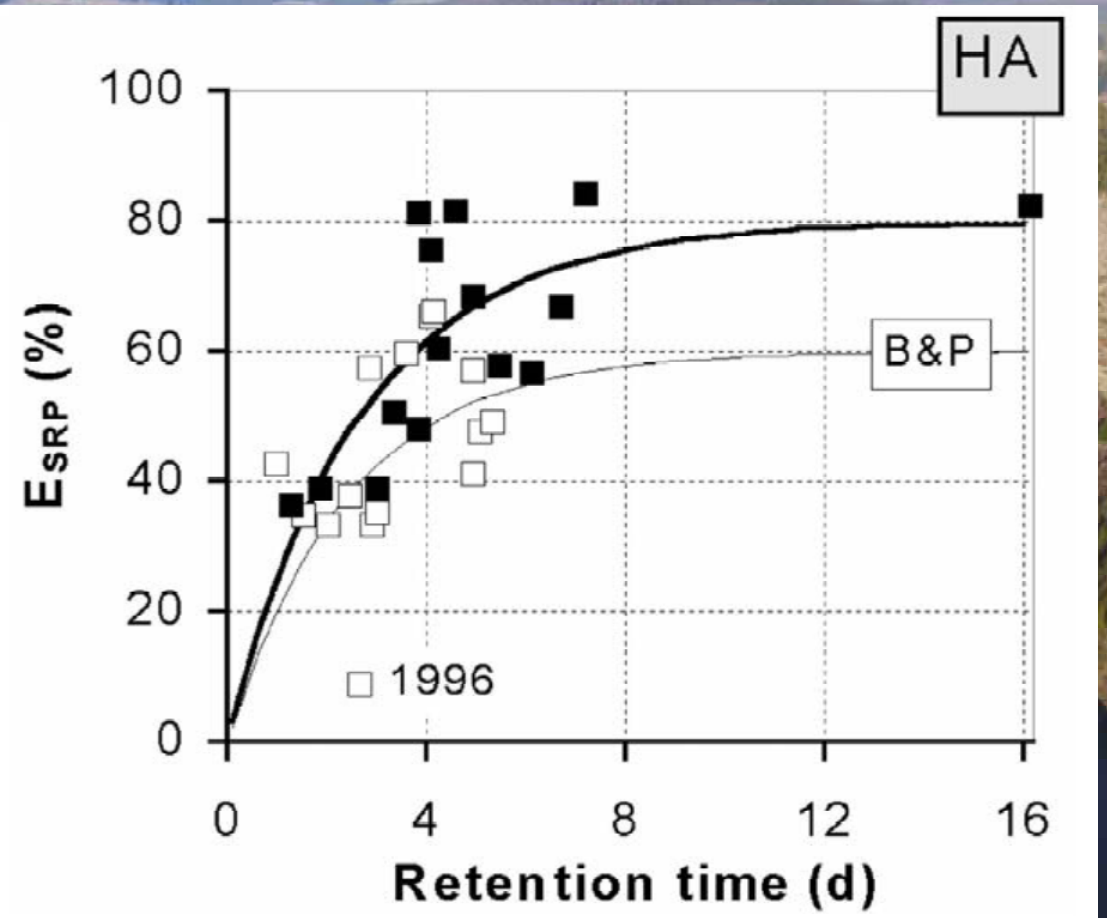
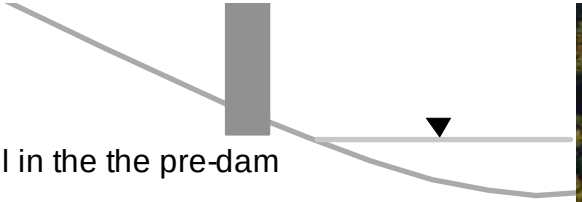
Example: Warme Bode 10-22. Sept. 2011



Nutrient elimination in pre-dams







Phosphorous (**P**)

Carbon (**C**)

Sedimentation

▽ water level in the the pre-dam

▼ water level in the main dam

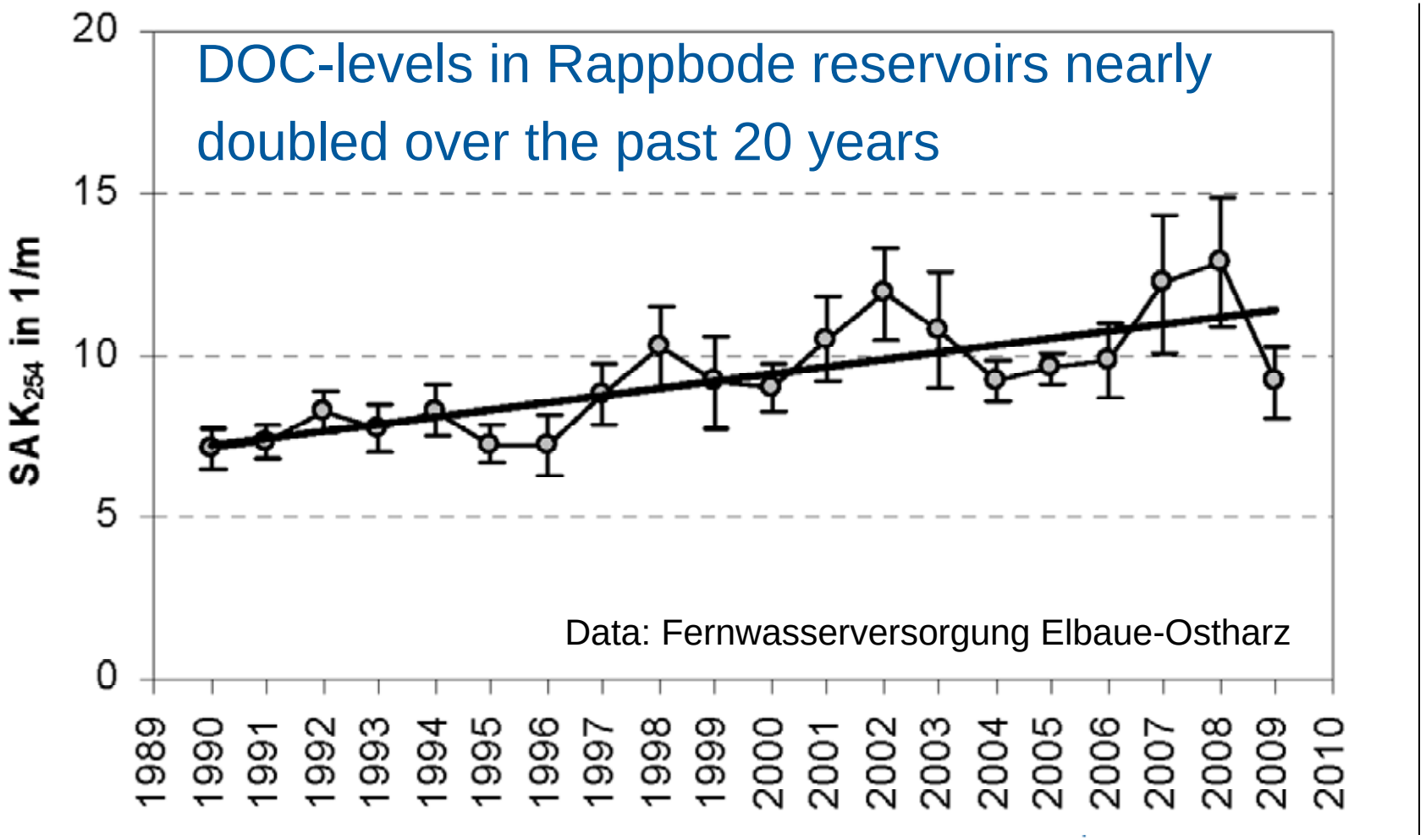
DOC = Dissolved organic carbon

Poolgrößen
DOC Ozean 700 Gt
CO_2 Atmosphäre 750 Gt
Terrestrische Pflanzen 600 Gt

Stoffflüsse
Seesedimente 0.04 Gt a^{-1}
Moore 0.1 Gt a^{-1}
Talsperren 0.6 Gt a^{-1}

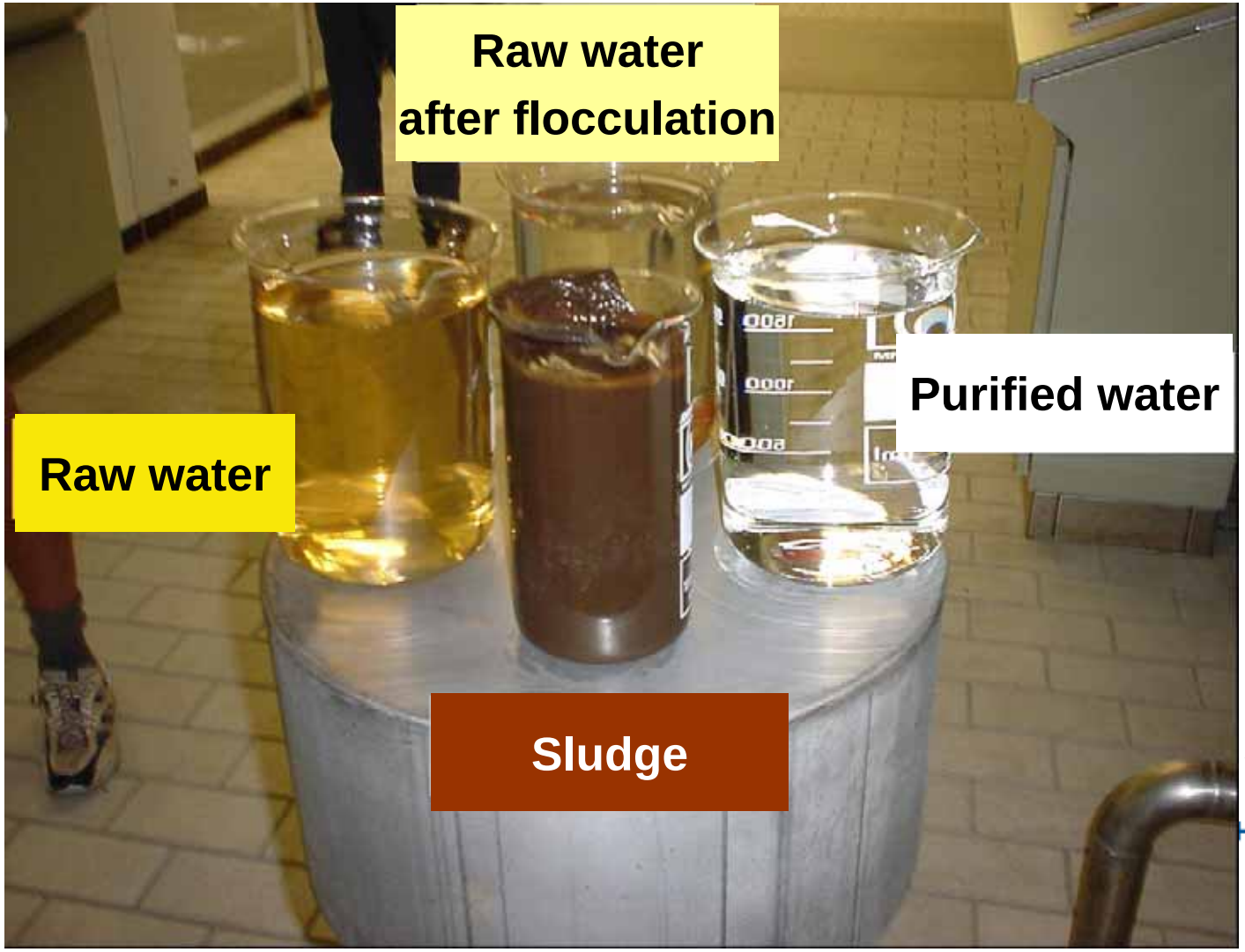
Research focus: rising levels of DOC*

***DOC=dissolved organic carbon**



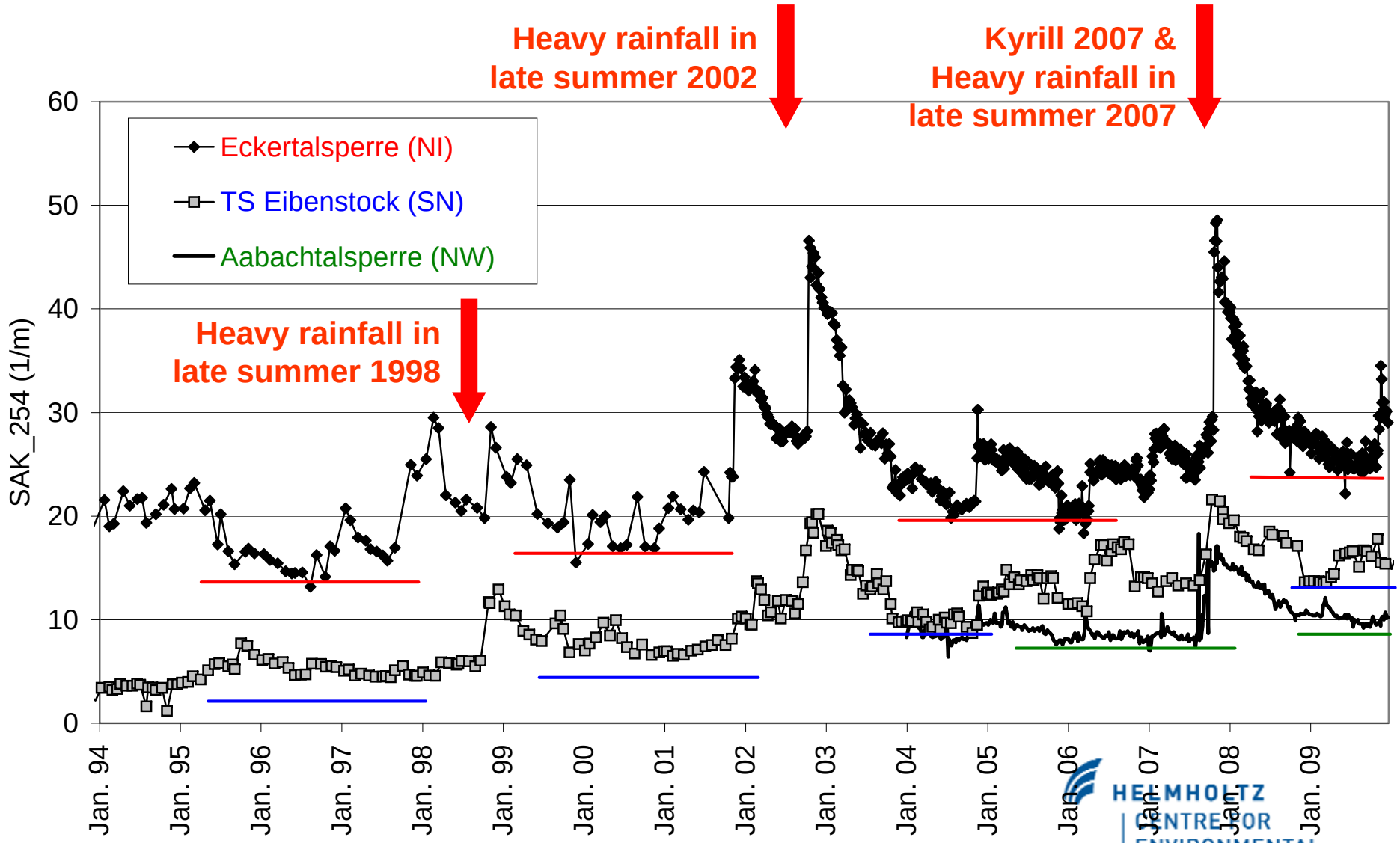
Problems in the waterworks:

stability of flocculation, sludge production & desinfection byproducts, …



Source:
LTV Sachsen

DOC-Eintrag durch hydrologische Extremereignisse



Quelle: LTV Sachsen