



## High frequency monitoring of biogeochemical processes in shallow lakes

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### Context and Objectiv:

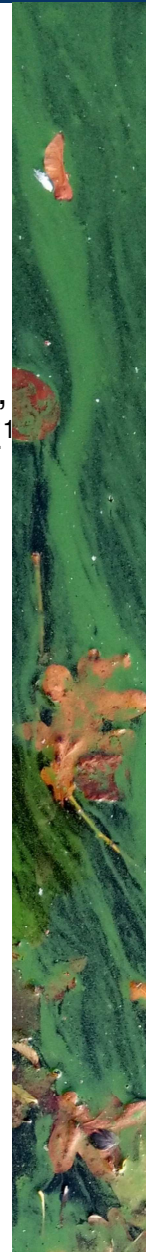
- Small urban lakes provide ecosystem services
- Massive presence in most urban landscapes
- The dynamics of their ecological functioning are fast and spatial variability is high

**Understand these processes and predict  
harmful algal blooms**

### Method:

Study sites: Champs-sur-Marne Lake and Créteil Lake

High-frequency monitoring with central transmission monitoring platform and side  
sensor chains



**Results:**

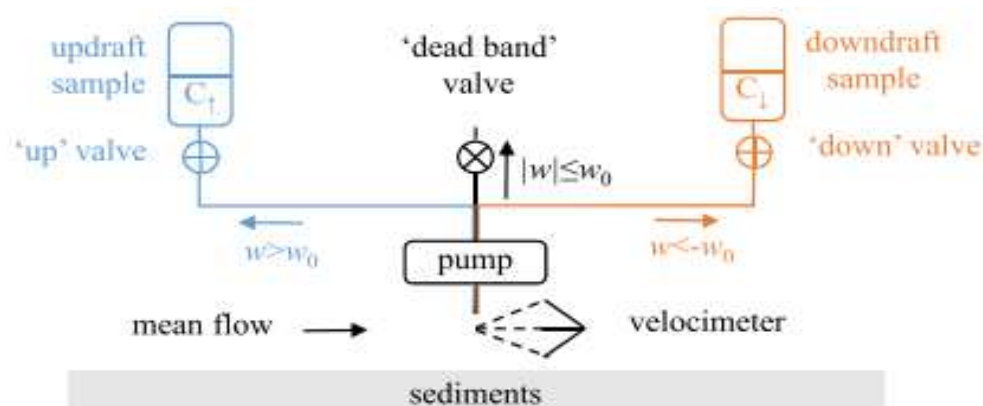
Hydrodynamic model at Lake Creteil - Delft3D-FLOW

Biological model at Champs-sur-Marne Lake - Delft3D-BLOOM

Cyanobacterial Bloom Alert System

**Perspective:**

Sampling system for measuring benthic fluxes by Relaxed Eddy Accumulation



$$F_{REA} = b(w_0) \cdot \sigma_w \cdot (\overline{C_{\uparrow}} - \overline{C_{\downarrow}})$$

