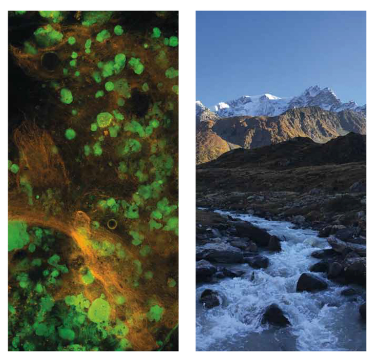


SBER

Stream Biofilm and Ecosystem Research Laboratory

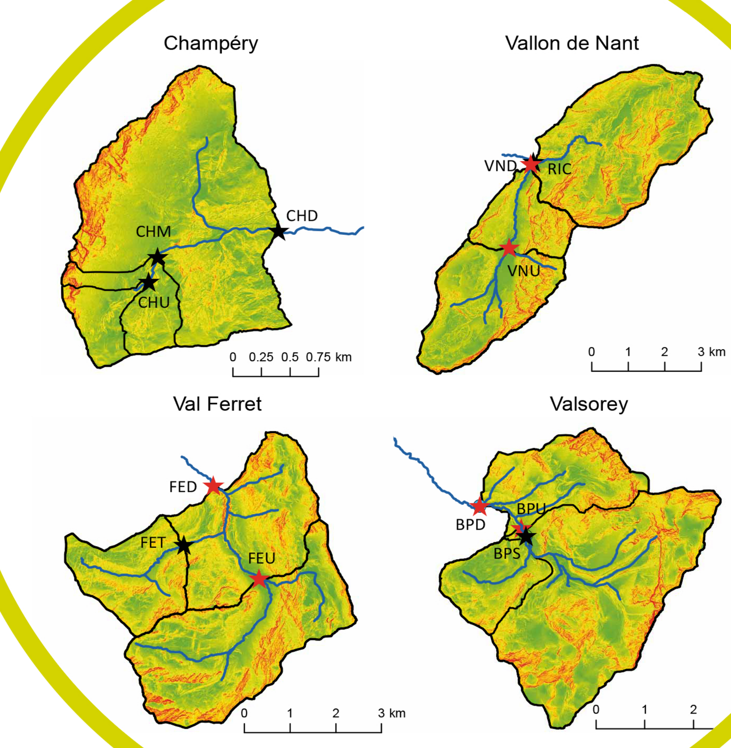
EPFL

Ecosystem Metabolism

The pulse of streams and rivers

BACKGROUND & AIMS

Ecosystem metabolism is composed of gross primary production (GPP), ecosystem respiration (ER) and the sum of these fluxes is net ecosystem production (NEP).



Climate change

Hydrological Regime **Temperature** **Light**

GPP + ER = NEP

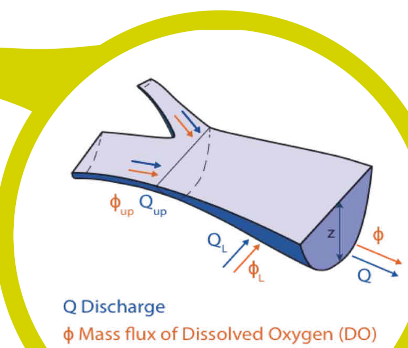
Metabolic balance

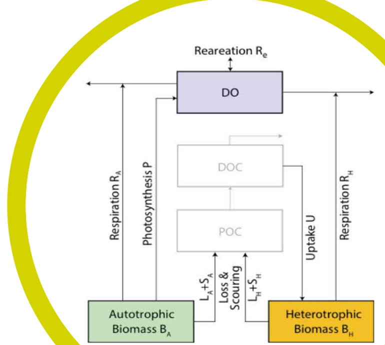
CO_2 efflux

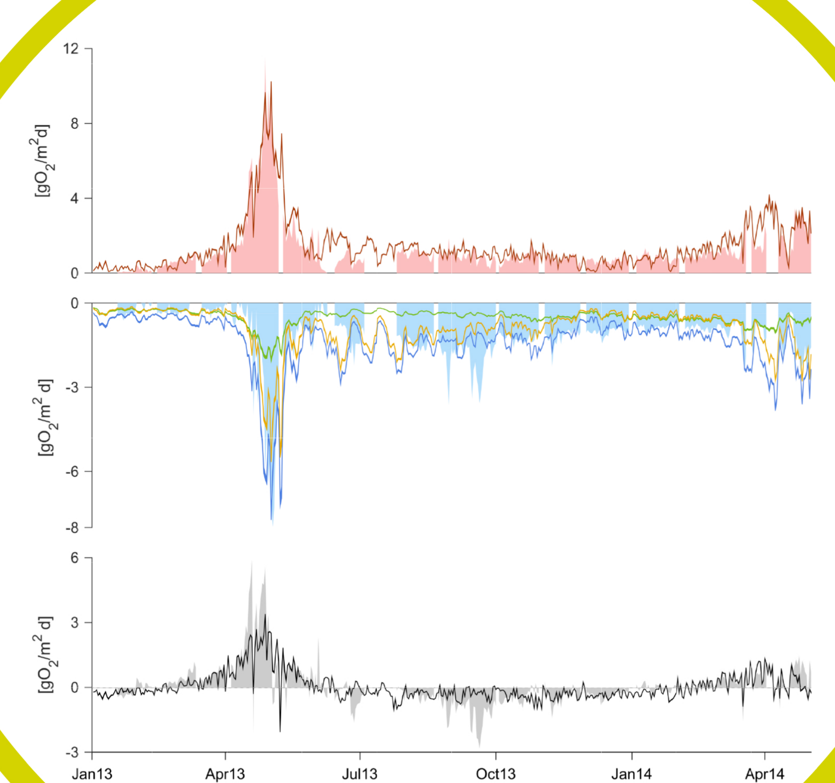
METHODS

We use high-frequency temporal measurements of oxygen and mechanistic modelling approaches to estimate GPP and ER.

We work within a gradient of non-glacier to glacier Alpine stream catchments where light, temperature, and the hydrologic regime drive ecosystem metabolism.

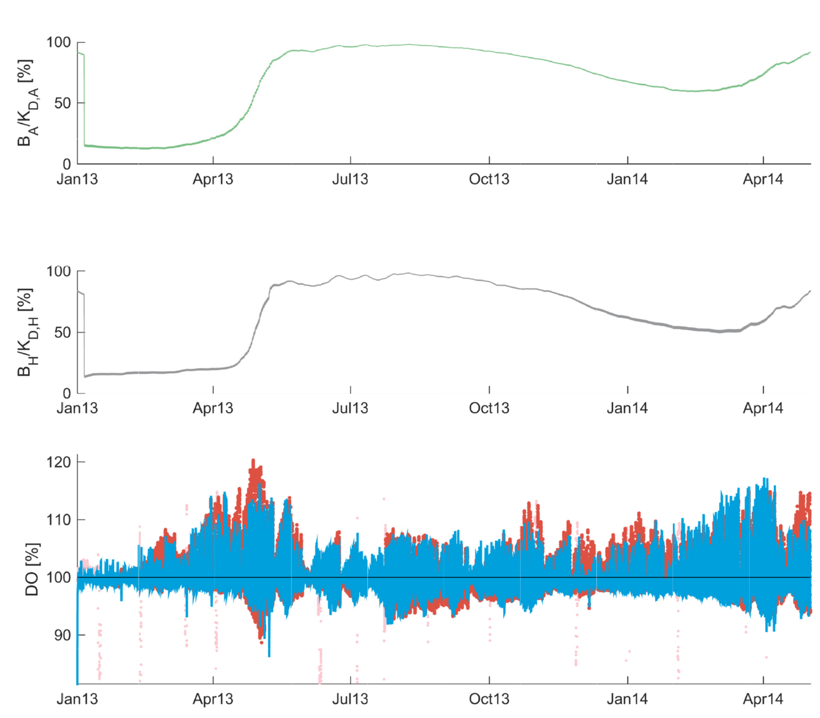


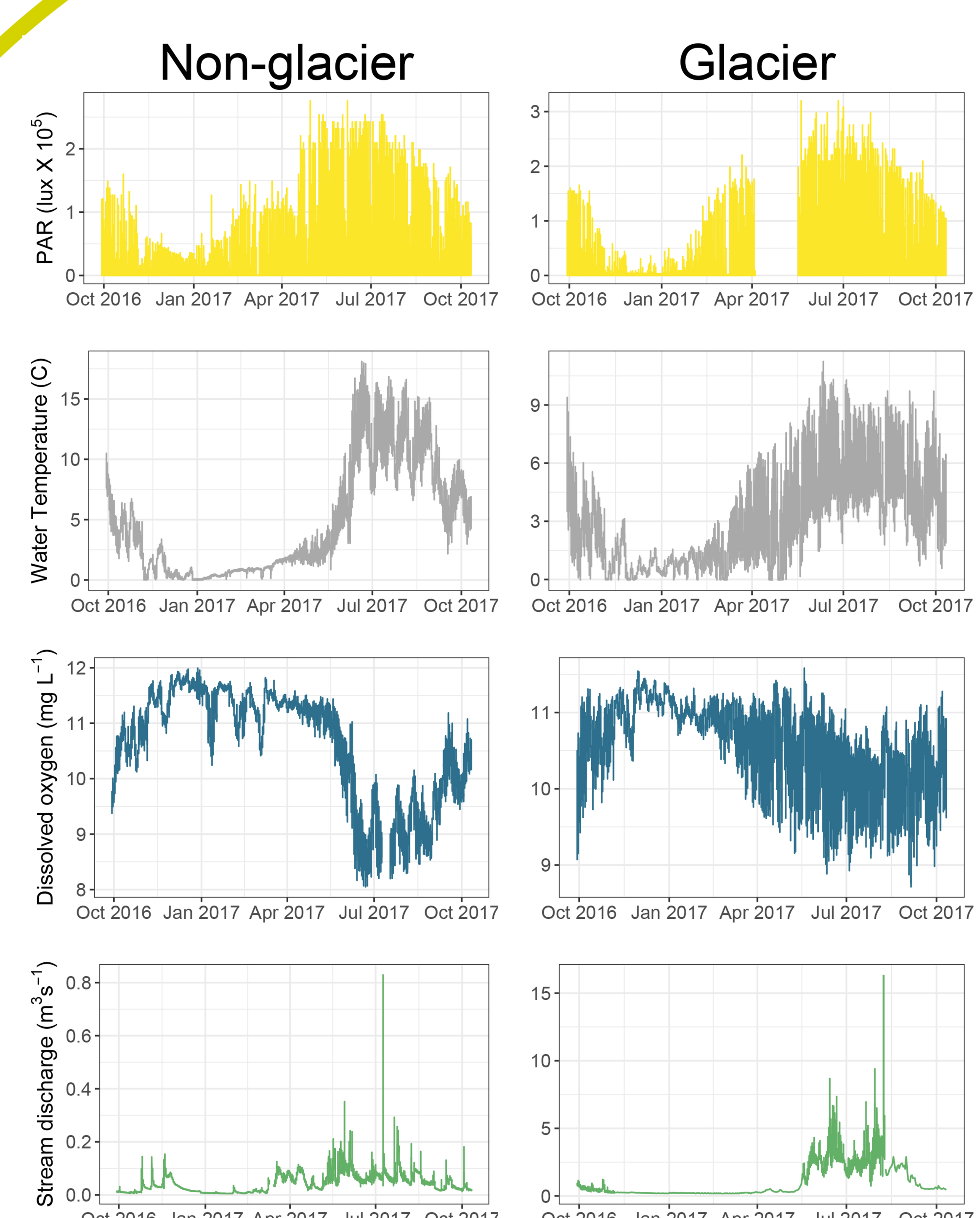




RESULTS

By combining biomass and oxygen data, we can estimate daily rates of GPP, ER, and NEP, where light, temperature, and stream hydrology drive distinct seasonal patterns.





RESULTS

The degree of glaciation drives the temperature, oxygen, and hydrologic regime.

NOMIS FOUNDATION

FNSNF SWISS NATIONAL SCIENCE FOUNDATION

MARIE CURIE ACTIONS