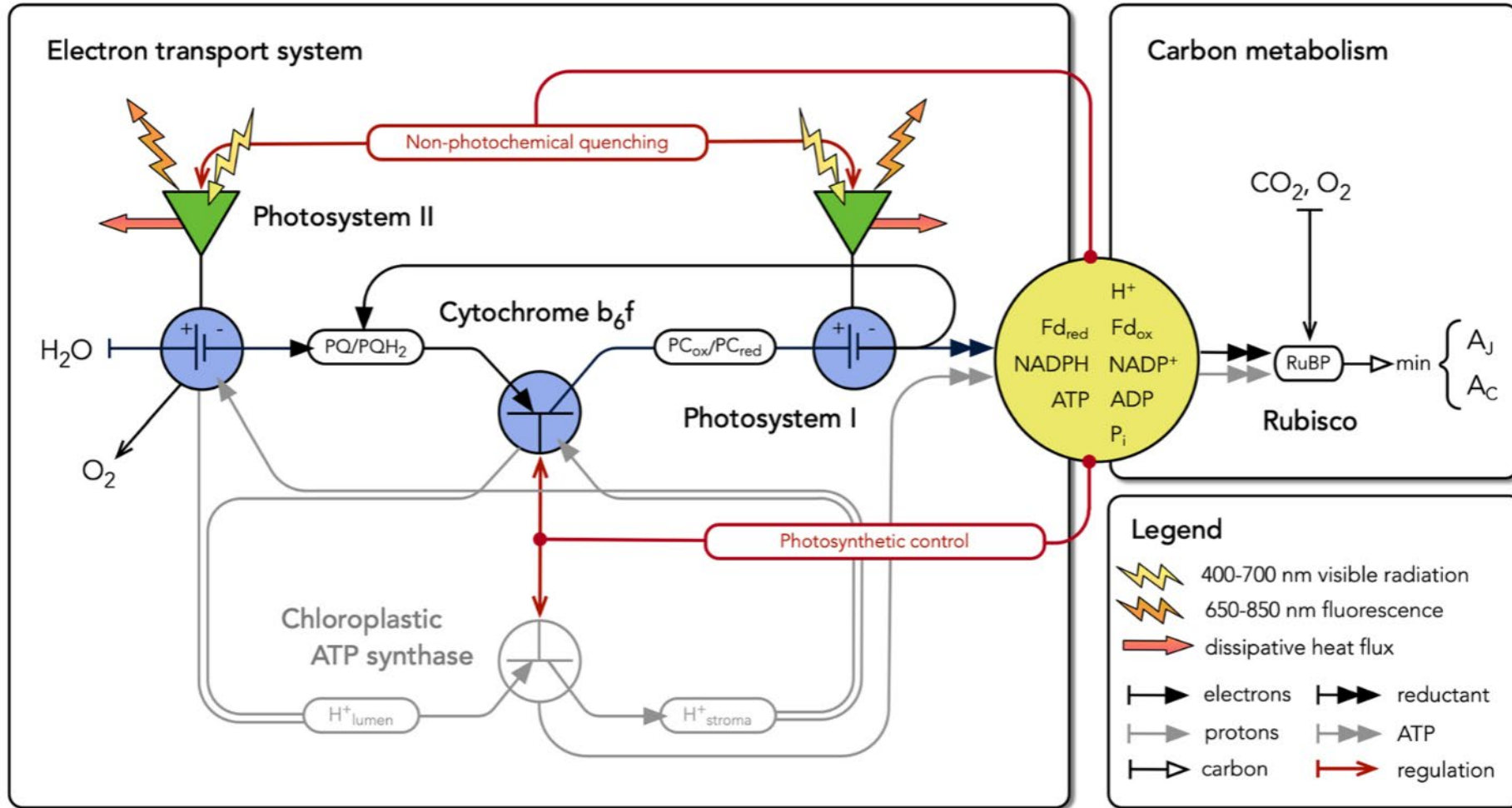


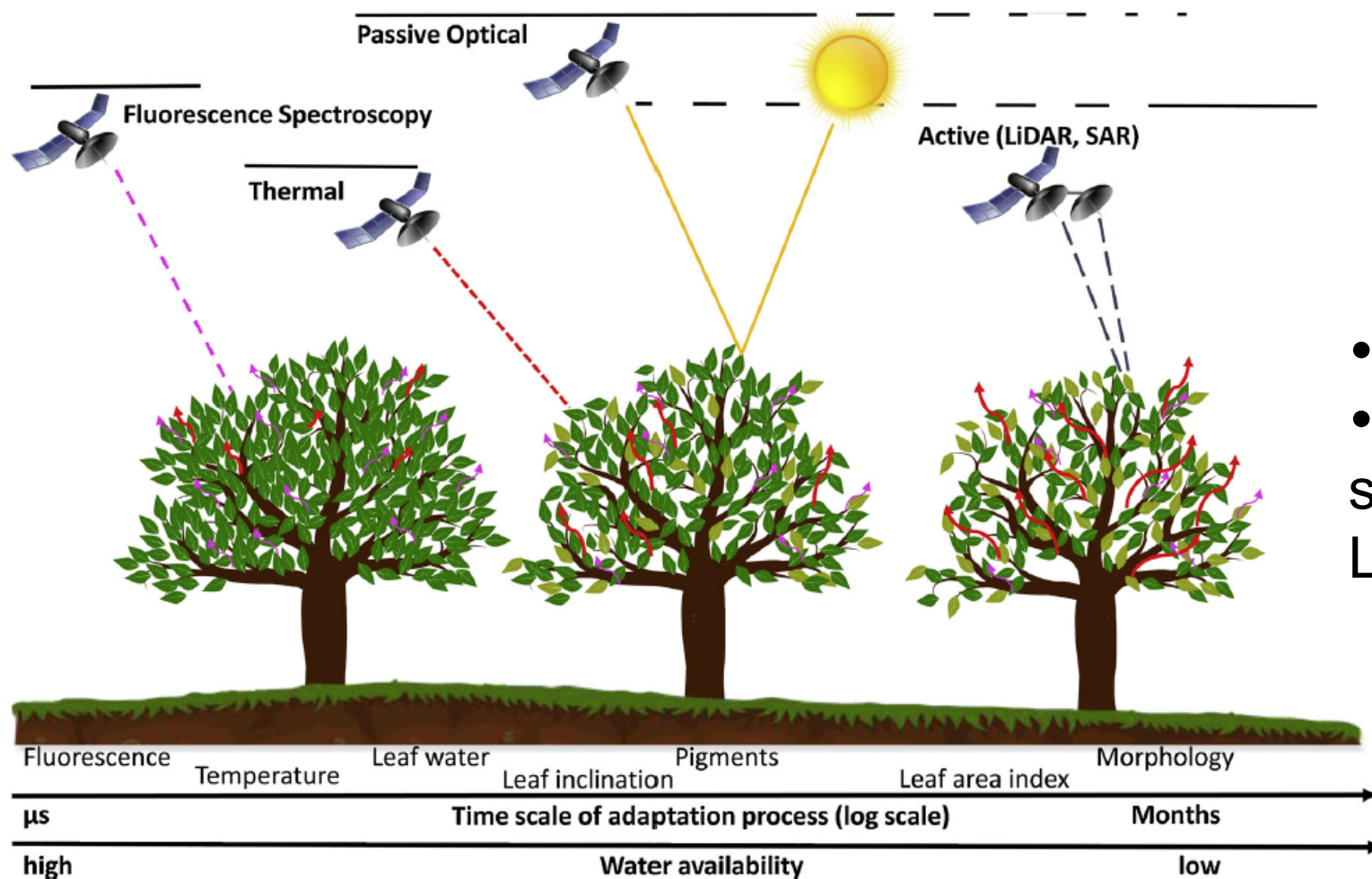
# One opportunity for land surface models: The Johnson and Berry model



- Extends the Farquhar model to include a mechanistic description of the electron transport system.
- Can be used to assimilate fluorescence observations.

*Johnson & Berry (2021). The role of Cytochrome b 6f in the control of steady-state photosynthesis: a conceptual and quantitative model*

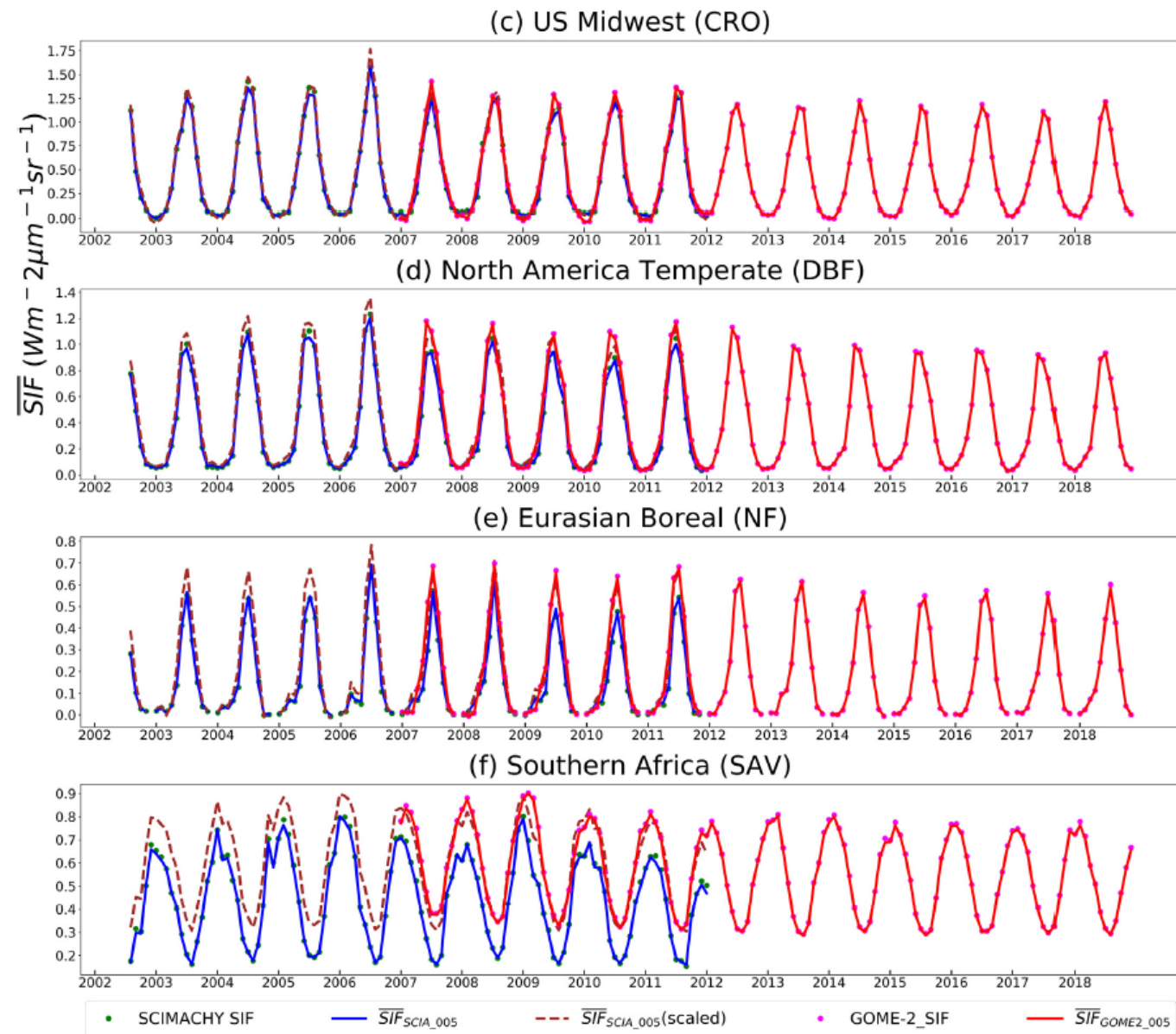
# One challenge: Improve GPP/Transpiration simulations of warm droughts



- C-W cycles
- Assimilation of multiple data streams (SIF, VOD, SSM, LST)

Fig. 2. Conceptual overview on the impact of plant water availability on physiological, biochemical, and structural adaptation mechanisms, and remote sensing technology sensitive to such plant adaptation mechanisms. Purple arrows indicate fluorescence radiation emitted by plants, red arrows relate to thermal radiation emission. Bold lines indicate the application spectrum of remote sensing technology, dashed lines indicate limited applicability.

# One priority/possible output before 2025: Create a SIF ECV



Wen et al. (2020). A framework for harmonizing multiple satellite instruments to generate a long-term global high spatial-resolution solar-induced chlorophyll fluorescence (SIF)