Climate forcing/mixing  *Why?*  temp data exists

Goals: Identify questions, Leaders, Plan, Products

How do lakes respond to mixing?

Climatic drivers on mixing cycles across places
Spatial scale: microstratification, regional forcing, global comparisons
Temporal scale: Diel mixing, nocturnal mixing affects

Annual seasonal mixing regimes: Poly Di Mono Mero
Episodic mixing regimes:
Typhoons
Storms/strong precipitation
Strong wind events

Comparative study of diel/diurnal/nocturnal mixing across lakes of varying:
1. Geography/latitude/altitude (tropical/subtropical/temperate)
2. mixing regimes (poly di mono mero)
3. Focus on epi/mixing layer only?
4. Focus on precipitation-induced events?

Does precipitation drive mixing/stratification?  Is there a regional trend?
Climate: cycles, directional stochastic seasonal
Precipitation, evaporation, Temp, wind, storms
Latitude, size, shape, catchment, hydrology

Approach survey or experiment

ATM⇒Climate⇒time scale⇒weather drivers⇒spatial pattern⇒thermal⇒lake
Response variables: DO, phyto/micro?

Stability of system versus scale (frequency, magnitude, intensity) of disturbance
Identify significant weather events (wind/precip)
How do physical processes happening at different time scales affect biological processes?
What is the regional patterns?
Polymictic-driving events?

Create a special session at a national/international meeting? (AGU/ASLO)
Thermal profile ⇒ search for discontinuity/glitch at various temporal scales (minutes, hourly, daily, monthly, annually; partial overturn, full mixis) ⇒ identify driver (weather) ⇒ search for generalities and exceptions ⇒ link to bio response (DO/phyto/micro)

Question:
1A. How does the duration/intensity/frequency (magnitude) of disturbance drive the rate of thermal structure change?
1B. What is the biotic response to the rate of these thermal structure changes?

MET data to find duration/intensity/frequency
THERMAL PROFILE to determine thermal glitches/mixing timing

6 month- 1 year: characterize how GLEON lakes mix/define mixing events
Leaders: unnamed post doc
Product: paper