Documenting the expression of nearshore mangrove ecosystem processes on La Parguera shelf water chemistry

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Background

Ocean Acidification (OA) at La Parguera

**“global OA”**

**Anthropogenic CO₂ increase (1)**

**Localized (2) DOC (CO₂⁻) increase**


1. **Atmospheric CO₂** dilution
   \[ H₂O + CO₂ \rightarrow H₂CO₃ \]

2. **Respiration**
   \[ H₂CO₃ \rightarrow H^+ + HCO₃^- \rightarrow H^+ + CO₂²⁻ = ↓pH \]

- What are the mangrove generated carbon export rates from these mangrove ecosystems?
- Are nearby coral reefs being negatively affected by this double OA effect?

Phase 1 Observations

Future Research

1. Hydrodynamic time series (ADCP) and discrete samples to document export rates
2. Vertical stability of water column with T and S profiles
3. Chemical parameters to understand carbon chemistry (DOC, POC, TA, DIC = CO₂ + HCO₃⁻ + CO₃²⁻)

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