Will large volcanic eruptions trigger El Niño-like responses?

Convincing observational evidence is still lacking ...

Takeaways

- Paleoclimate data assimilation enables the comparison and optimal fusion of different proxy records within a consistent dynamical framework.
- We see no real contradiction between trees and corals, and the event selection is more consequential.
- Recent modeling studies suggest that multiple factors can affect the response: location, intensity, season, preconditioning of the ENSO state ...
- Last millennium is not enough. More and longer proxy records are needed.

PDA: comparison and optimal fusion

- Kalman Filter
- Innovations
- Climate Models
- Observations
- Proxy System Models
- Observations
- State Update
- Forward Operator
- Kalman Gain
- LMR (Corals x 1336)
- LMR (Trees x 2013)

Key Refs

- Tree ring-based Study [Li13]
- Coral-based Study [D20]
- PAGES2k v2 Database
- Last Millennium Reanalysis PDA framework