

# New observational constraints for tropical forest biogeochemistry

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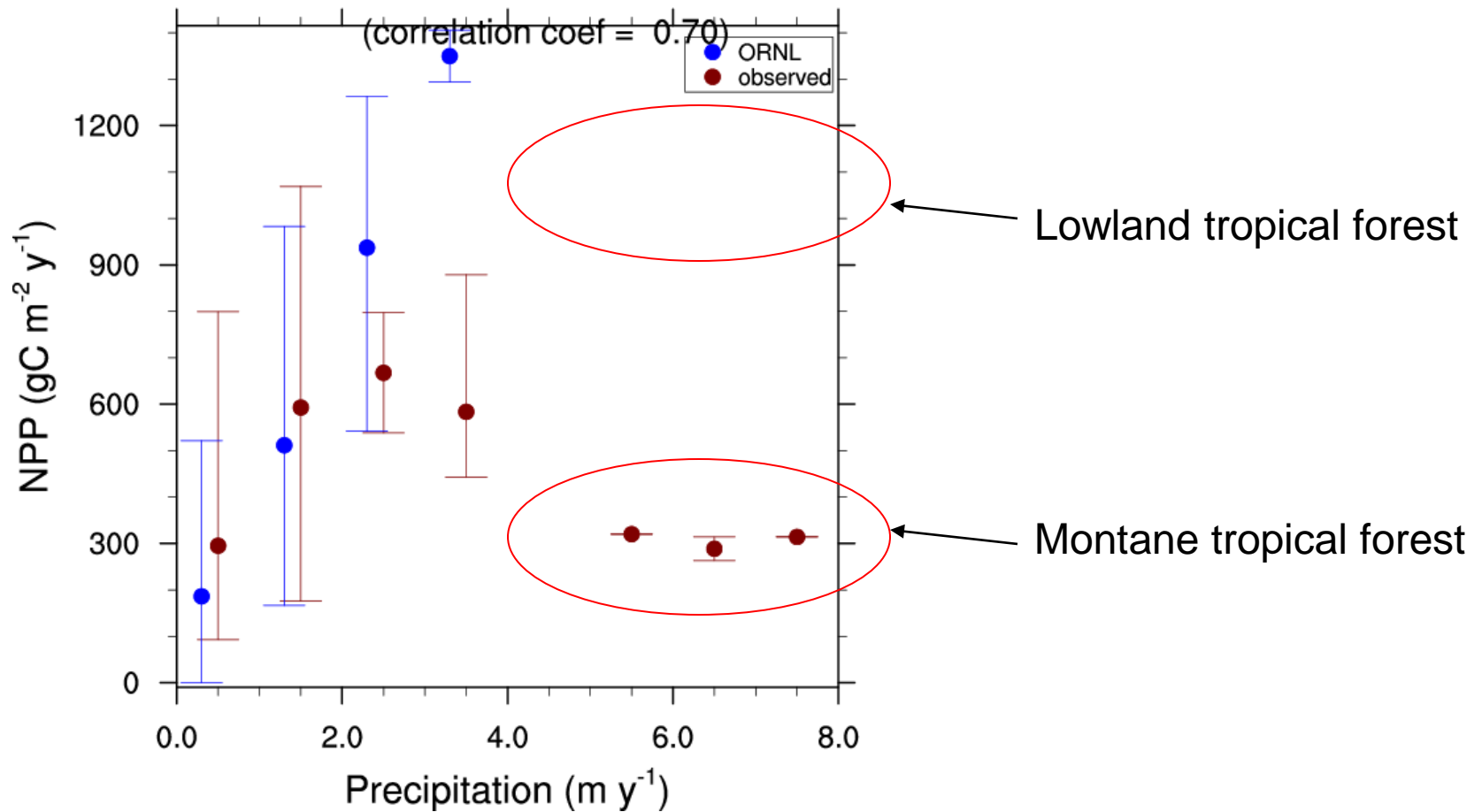


# ANPP database from NCEAS activity (P. Taylor, W. Wieder)

- Adding data from lowland tropical forest changes the shape of NPP vs. precipitation diagnostic (C-LAMP EMDI metric).
- Relates decomposition rates to ANPP and climate metrics.
- Higher estimate of tropical forest NPP than derived from either MODIS or Schuur-EMDI analysis.
- Evaluation of microbial respiration as a fraction of soil respiration.

# Potential Update to EMDI NPP (C-LAMP)

ORNL (1975-2000) vs Class A Observations (81 sites)



# Litter removal/addition experiment

- Ed Tanner, Emma Sayer, Cambridge Univ.
- Barro Colorado Island, Panama. Moist lowland tropical forest. Smithsonian Tropical Research Institute
- Paired-plot study, modifying nutrient dynamics by removing litter from one plot and placing it on adjacent plot.
- Manipulation for six years

# Other experiments/datasets

- N and P fertilization studies (BCI, Costa Rica, others?)
- “stadium lights” experiment – modify light environment
- DOE experiment in the Amazon??  
Workshop in July, stay tuned for details.
- Canopy height (several sources)
- Biomass, mortality, NPP from RAINFOR

# Modeling approach

- Develop global P database (Xiaojuan Yang, Mac Post)
- Implement C-N-P dynamics in CLM
- Evaluate new model against observed ANPP, decomposition rates, biomass, belowground C stocks
- Replicate litter removal/addition experiment
- Try to convince experimentalists/funders to get a soil warming experiment started in moist tropical forest.