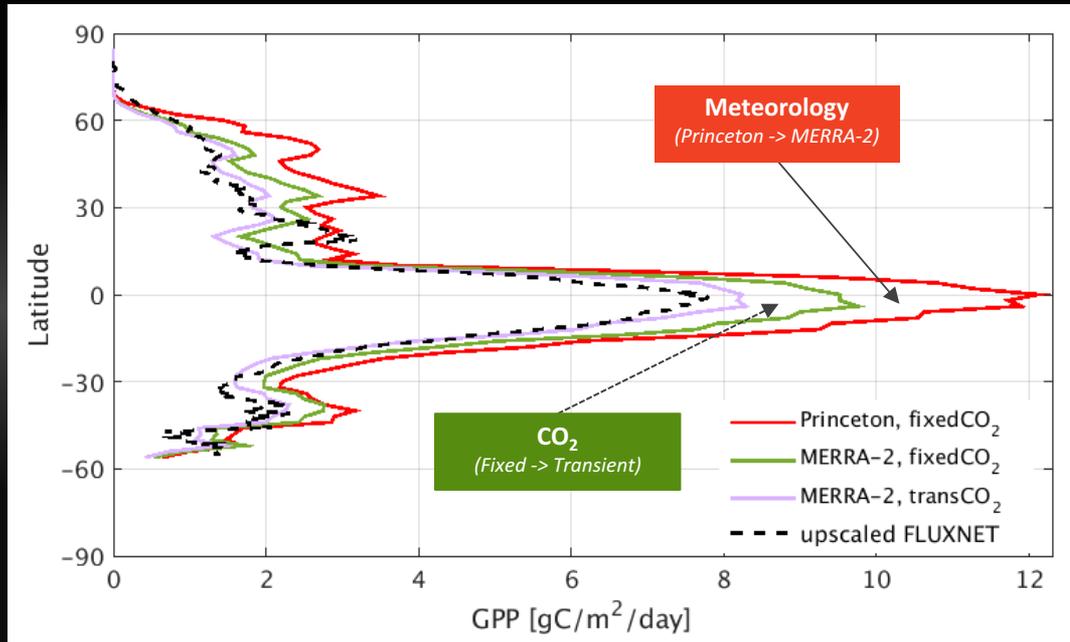


Estimate of Gross Primary Production with the NASA GMAO Catchment-CN Model



Gross Primary Production (GPP) is the rate of uptake of CO₂ from the atmosphere by photosynthesis. It depends on biological functions of the plants, as well as on the amount of atmospheric CO₂ and the meteorological conditions.

Catchment-CN model results are compared to an observation-based estimate of GPP. Using a widely used meteorology dataset and fixed CO₂ concentrations, the computed GPP (red) is more than 50% larger than the observational estimate (black dotted line). This disagreement is reduced substantially by using MERRA-2 meteorology (green) and more realistic CO₂ (violet).