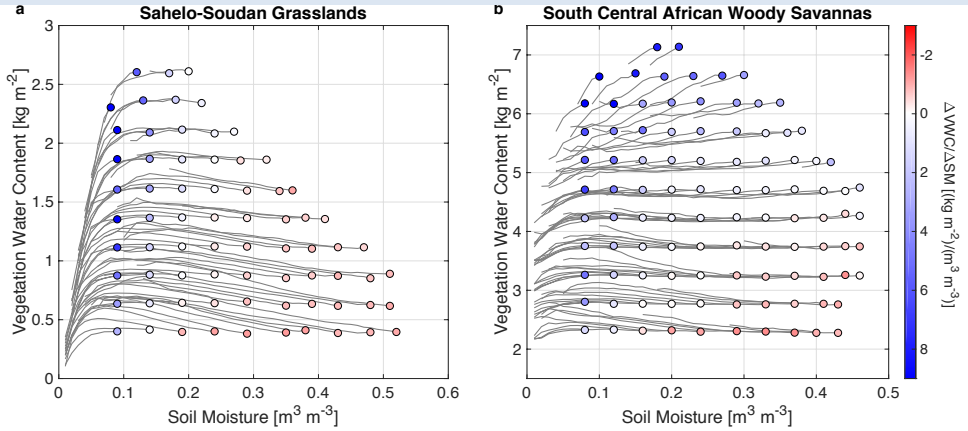
Moisture Pulse-Reserve in the Soil-Plant Continuum Observed Across Biomes

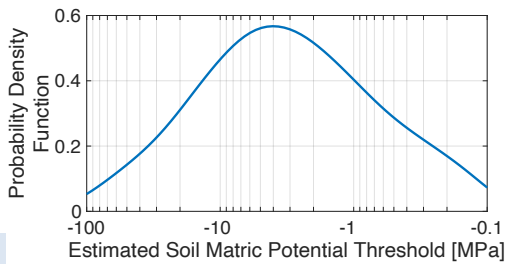
Problem: The range of vegetation response to pulse-availability of moisture that drives water, energy and carbon exchanges between land and atmosphere is not known.

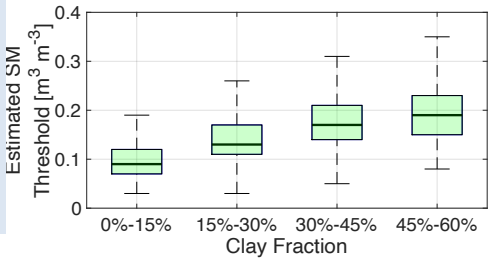
Finding: SMAP-based simultaneous estimates of soil and plant water storage dynamics
show evidence of pulse-response behavior across more than half of global ecosystems.

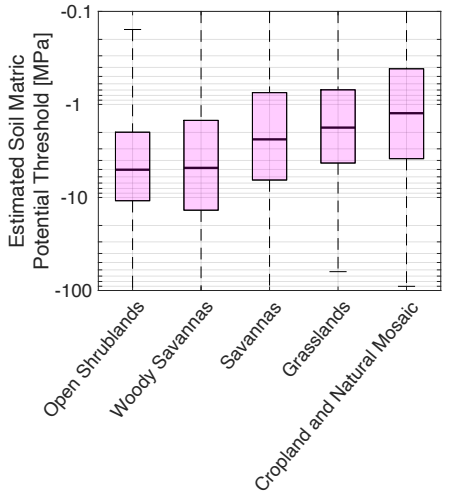
Impact: Intermittency as well as mean resources availability drives land-atmosphere water, energy and carbon exchanges.



Phase diagram shows plant water content response following rain events for two different biomes.







This study estimates plant wilting limit based on SMAP data and finds its relation to both soil texture and plant type.

Feldman, Gianotti, Konings, McColl, Akbar, Salvucci, Entekhabi, 2018: Moisture pulse-reserve in the soil-plant continuum observed across biomes, *Nature-Plants*.