Interannual variability in North American ecosystems

NEE anom = NEE/year – NEE/mean

Further examine IAV in NEE and GPP

SVD of NEE and GPP anomalies

• Examine 17-year IAV in FluxSat GPP (2001-2017). FluxSat is an upscaled GPP product using MODIS measurements using Fluxnet and SIF measurements.
• Separately examine east (forest, croplands) and west (semi-arid) of North America.

IAV and environmental drivers

• In West, amplification is associated with wetter-cooler conditions
• In East, shift to earlier in the year is associated with warmer spring

SVD of month-by-year array of anomalies. ➔ Show dominant modes of variability between years

Amplification dominates in west. Compensation dominates in east

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For more details:
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Byrne et al., Outsized contribution of the semi-arid ecosystems to interannual variability in North American ecosystems, ESSOAr, doi: 10.1002/essoar.10502484.1

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