Meeting w/ Beverley & Jamie Shanley

Forward Jamie the email with the raw data

Look at Lance B and Donna paper

QAQC pyranometer data to look for daily cycle

Calc & visualize cumulative precip curves (could plot runoff and discharge if normalized)

Calc & try using cumulative diversion

Calc antecedent/memory variables

How to incorporate memory effect:

* 3-5 day moving averages
* Temperature, precip
* Pyranometer, try the daily sum
* Try degree day
  + I’m not sure this makes sense, skipping for now

Calculate diff in June vs. diff at end of Sept and look at correlations (justification for looking at this spring snowmelt period)

Quantitative metrics

* # of days that have precip cluster

Group the years into high diff med diff low diff

Stacked bar graph (height = total runoff) of proportion of cluster, arrange bars by height

Re-run SOM with 1500 iterations

Try regressing diff on proportion of days with precip during warm period

What about range normalizing vars by wyear? At least for snow depth?

Maybe look at relationship between cumulative precip and diff? Maybe after the switch from cold to warm?

Maybe it has something to do with the number of days of rain after the s-curve? Including in late-spring and summer?

PCA and how years fall out

Proportion of blue vs. green

Ration of

Higher: 2012, 2006, 2011, 2013

Lower, 2002, 2016, 2017, 2019

Years where dynamics occur before springmelt: 2004, 2006,

Maybe 2009

Meeting w/ Beverley & Donna re: SOM for Beverley’s paper

Donna suggests dynamic time-warping, but before we do that, try SOM first

Advice w/ SOM: look at U-matrix

Expectation: data would classify into at least two groups given diffMay ~ MaxSnowDpth

Input metrics

* Do it just for Apr-May (incorporating too much of climate pattern, you wash out the signal)
  + Or could pick max runoff month and then choose that month and 2 months previous
* Max snow depth or depth on a certain date
* Precip data from PRISM
* Temperature
* Station data from Morrisville airport
* Metric for how much water was transferred from stream to snow-making reservoir (e.g., how negative cumulative runoff was Jan-Feb)

Lindsey and Nicki have another way to visualize