Jan 2

**Desk**

Read Schaefli’s paper on Q pdf for winter in snow dominated catchments, but need ArcGIS to do more about it

Begin using Mathematica to find analytic solution to Marc’s seasonally dry streamflow pdf with the Mathematica notebook called “Analytic Solving of Marc Dry PDF”

Jan 3

**Desk**

Put output from Mathematica into “FCN\_findDrySeasonPDF\_Marc\_analytic1.R”, which takes derivative of Marc’s paper’s Eqn 13 for dry season streamflow pdf. Comparison to numeric pdf finding is good; added analytic1 to Testing Marc Seasonally Dry.R

Begin coding up the second method for finding analytic solution into Mathematica

Jan 4

**Desk**

Closer look at Marc’s equations for conditional CDF and unconditional CDF, especially the integration limits. Attempted to solve for the pdf of dry season streamflow using integration of conditional pdf and pdf of initial dry season streamflow with Mathematica; got lots of conditional expressions. Put these in for testing in Testing Marc Seasonally Dry.R; but agreement is poor

Summarized winter break

Jan 15-16

**Desk**

Gammainc error exploration.R looks at the two different ways gammainc fcn gives error (gam too high for all seasons, or the “secondTerm” in Marc’s equation for seasonally dry). Forced these to 650 in case they were too high – used graphs to show that this is ok and doesn’t significantly change the final answer.

Jan 17

**Desk**

Read Dave’s 2017 HESS paper on a,b power law recessions and Brutsaert and Nieber, 1977. Began following Brutsaert and Nieber’s recession fitting recommendations for CA basins, since Dave’s data is only for k.

R Code: power law recession.R, which ignores a certain number of days after rainfall and fits log(-dQ/dt) vs. log(Q)

Jan 18

**Desk**

R code: FCN\_powerRecession.R, incorporated into Testing Marc Seasonally Dry.R and began Power Law Validation.R, which attempts to see what stretches of Q are included in power law regression and calculates Q(t) from a,b and see if it matches data.

Jan 19

**Desk**

R Code: FCN\_powerRecession.R : added in a minimum recession length

Jan 22-24

**Desk**

Begin EFMH Feb 7 presentation – involves integrating past plans and future plans