This document lists the bits of code used to produce the 15 figures in the -16 Feb 2013 Uintah Basin CAP paper for ACP. The MATLAB scripts are found in the following folder:

/uufs/chpc.utah.edu/common/home/horel-group2/eneemann/matlab/matlab

The RIP scripts are found in the following folder:

/uufs/chpc.utah.edu/common/home/u0818471/RIP5/RIP4

Make sure the correct model run is being used when running RIP. To run RIP, combine the RIP commands below with the RIP script for the particular figure. Run the RIP scripts from the RIP folder above, after first running the RIP “source” command.

“source” command: setenv RIP\_ROOT /uufs/chpc.utah.edu/common/home/u0818471/RIP5/RIP4

BASE simulation RIP command: ./rip /uufs/chpc.utah.edu/common/home/horel-group2/eneemann/Uintah\_Basin\_Runs/WRFv3.5/Feb\_2013\_BASE/RIP/MYJ\_213\_BASE

FULL simulation RIP command: ./rip /uufs/chpc.utah.edu/common/home/horel-group2/eneemann/Uintah\_Basin\_Runs/WRFv3.5/Feb\_2013\_snow\_TIN12IAU0T/RIP/MYJ\_213\_snow\_TIN12IAU0T

**1** – Schematic graphic built in PowerPoint

**2a** – Domain 1 created in RIP, Labels (12 km, etc) added in PowerPoint, scale legend added in PowerPoint

 RIP script: ACP\_fig2a\_domain.in

**2b** – Subdomain created in RIP, all labels, dots, lines added in PowerPoint, scale legend added in PowerPoint

 RIP script: ACP\_fig2b\_subdomain.in

**3** – Snow curve created in MATLAB

 MATLAB script: ACP\_fig3\_WRFsnow\_curve.m

**4ab** – Albedo plots created in MATLAB

 MATLAB script: ACP\_fig4ab\_albedo.m

**4cd** – Snow depth plots created in MATLAB

 MATLAB script: ACP\_fig4cd\_snowdepth.m

**5** – NASA SPoRT Snow-Cloud and Nighttime Microphysics products

**6** – Profiles created in MATLAB, need to paste/trim in PowerPoint to build the figure. There are comments in the MATLAB code about how to change the date and location. The script produces profiles for 6 variables: Temperature (C), Theta (K), RH (%), RH w.r.t. ice (%), Wind Speed (m/s), Wind Direction (degrees).

 MATLAB script: ACP\_fig6\_profiles.m

**7a** – Ozone Timeseries created in MATLAB

 MATLAB script: ACP\_fig7a\_O3\_TS.m

**7b** – Ceilometer Figure is from John Horel (looks like it’s made with Python)

**8** – Time-averaged 2m temp plots created in MATLAB, scale labels added in PowerPoint

 MATLAB script: ACP\_fig8\_avg2mtemps.m

**9** – Time-averaged difference in 2m temp and LW radiation between BASE and FULL created in MATLAB, scale labels added in PowerPoint

 MATLAB script: ACP\_fig9\_BASE\_FULL\_diff.m

**10** – Theta time-heights produced by Erik Crosman (in IDL)

\*\*\*For Fig 11, RIP will need to be run for both simulations (BASE and FULL) to get separate figures for a/b and e/f.\*\*\*

**11ab** – Integrated clouds created in RIP, scale labels added in PowerPoint

 RIP script: ACP\_fig11ab\_intclouds.in

**11c** – Water mixing ratio (BASE) created in RIP, scale labels added in PowerPoint

 RIP script: ACP\_fig11c\_qcloud\_bot15.in

**11d** – Ice mixing ratio (FULL) created in RIP, scale labels added in PowerPoint

 RIP script: ACP\_fig11d\_qice\_bot15.in

**11ef**– LW radiation from clouds created in RIP, scale labels added in PowerPoint

 RIP script: ACP\_fig11ef\_lwclouds.in

**12a** – 2.3km winds created in RIP (FULL), red line and scale labels added in PowerPoint

 RIP script: ACP\_fig12a\_2.3kmwinds.in

**12b** – West-East potential temp cross section created in RIP (FULL), labels added in PowerPoint

 RIP script: ACP\_fig12b\_theta\_xsect.in

**13** – Time-averaged zonal wind cross section (day/night) created in MATLAB, labels and colorbar added in PowerPoint

 MATLAB script: ACP\_fig13\_uwind\_xsect.m (takes about 6-7 minutes to run)

**14** – Ozone transect/time series figures produced by Matt Lammers, dots, labels, and rivers added in PowerPoint

**15ab** – CMAQ average ozone created in MATLAB, colorscale/label built in PowerPoint

 MATLAB script: ACP\_fig15ab\_CMAQ\_ozone.m

**15c** – CMAQ average ozone cross section (FULL) created in MATLAB, labels added in PowerPoint

 MATLAB script: ACP\_fig15c\_CMAQ\_xsect.m

**15d** – CMAQ average ozone cross section (NONE) created in MATLAB, labels added in PowerPoint

 MATLAB script: ACP\_fig15d\_CMAQ\_xsect.m

**16ab** – Ozone time series created in MATLAB, crop/paste Roosevelt/Horsepool into PowerPoint

 MATLAB script: ACP\_fig16ab\_CMAQ\_O3\_TS.m

**16c** - Theta and ozone time-height produced by Erik Crosman in IDL, colorbar and labels added in PowerPoint