

LS3MIP and GSWP3: updates & status

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& Thanks to : [Paul Dirmeyer](#), Aaron Boone, Bertrand Ducharme, David Lawrence, Stefan Hagemann, **Bart van den Hurk**, **Gerhard Krinner**, [Sonia Seneviratne](#), **Chris Derksen**, [Gill Compo](#), [Eun-chul Chang](#), [Satoshi Watanabe](#), [Kei Yoshimura](#), [James Famiglietti](#), [Yukiko Hirabayashi](#), [Taikan Oki](#), and Many...

Current Status of LS3MIP/GSWP3

Forcing data:

Version 1 ready

@ DIAS.NII.AC.JP

@ ESGF-JP node (after system update)

Minor update will be by August, 2017

Data request:

Some errors fixed

Reduced set: 3hr request only for DECK period

Not requesting vertical profile of snow variables

(vertically integrated SWE, density-weighted SnowT)

cf convention related issue for 39 variables

Experiments:

Reduced set: only two tier-1 experiments

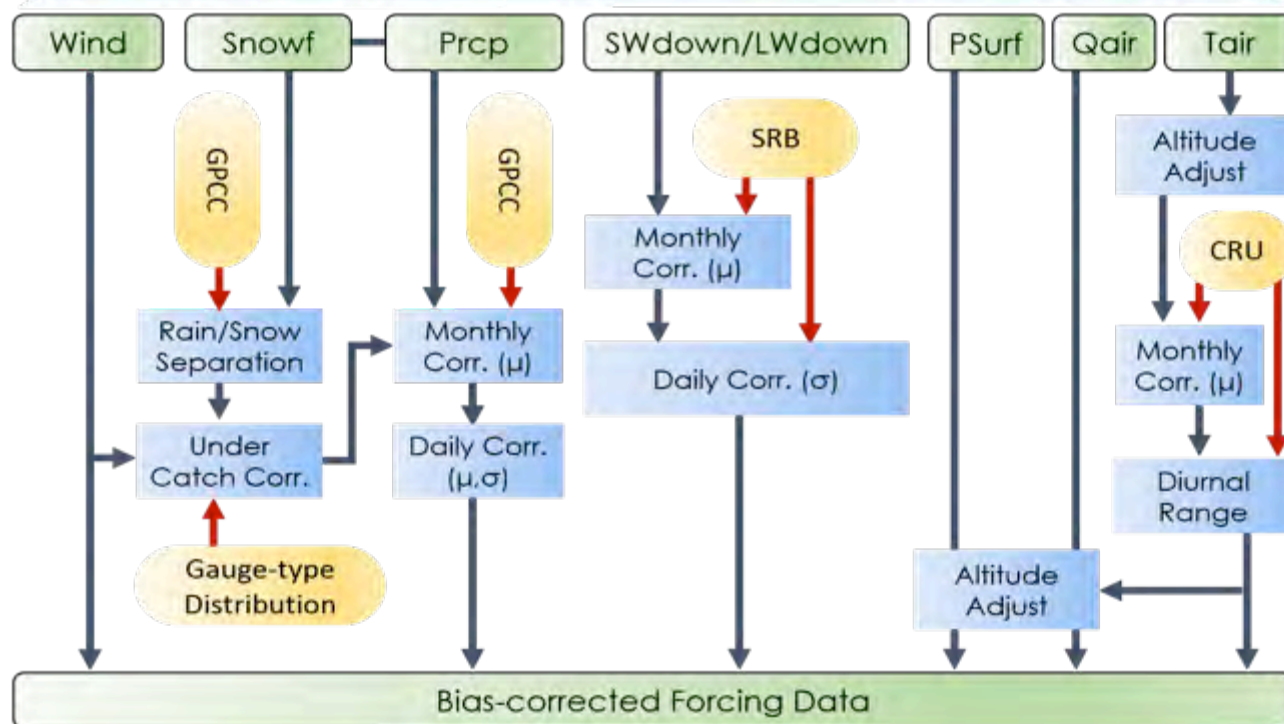
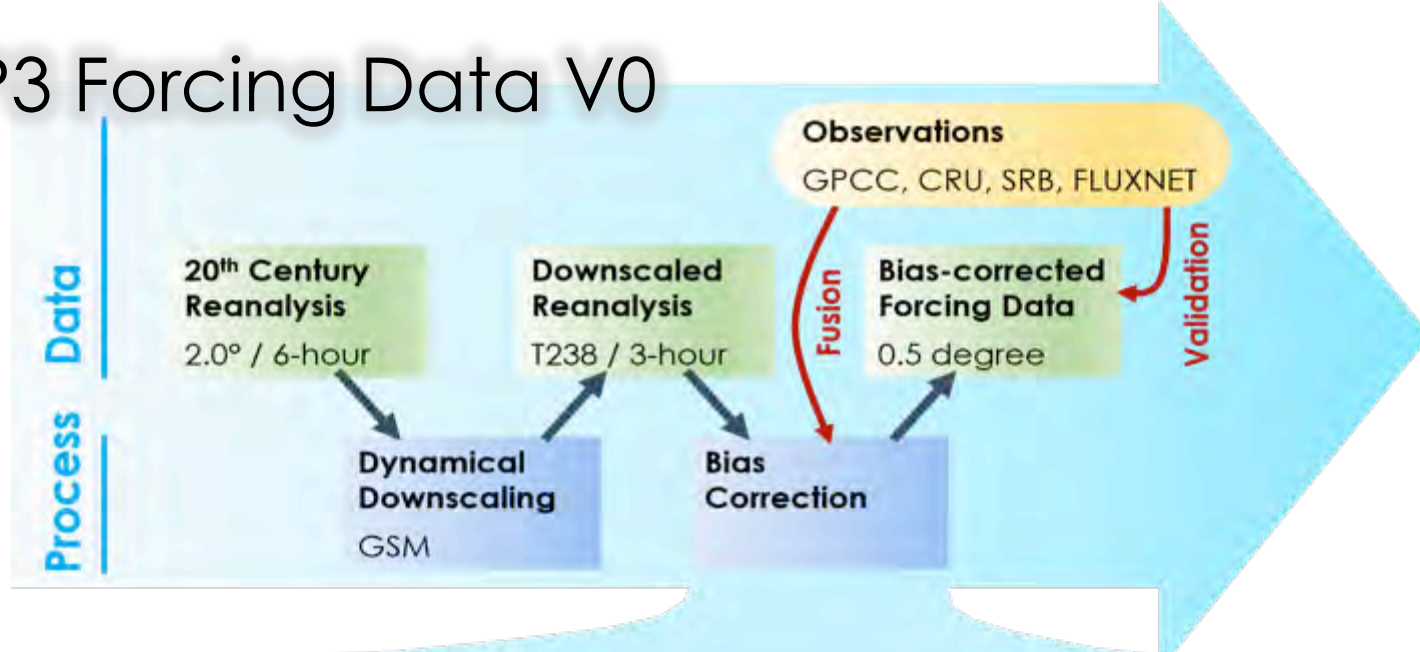
* land-hist : historical offline simulation using GSWP3 forcing (165yr?)

* Ifmip-pdLC : LAO coupled with prescribed land 1980-2014 (121yr)

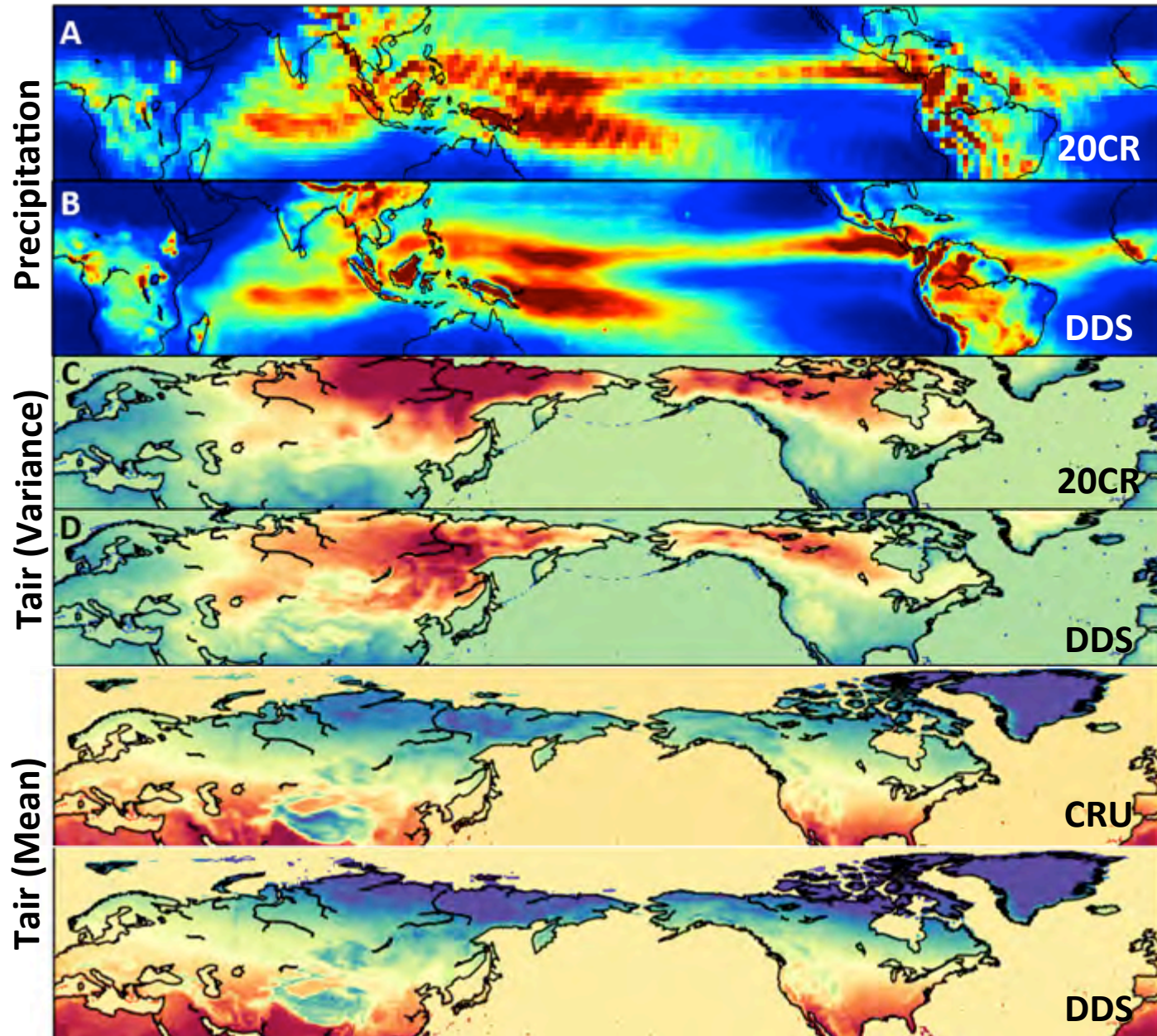
Kick-off meeting

@ September 11th, 2017 (Mon.) 12.00 – 15.00 UTC

GSWP3 Forcing Data V0



Reduce Gibbs Phenomena & Added Values



Status of Forcing Data and Feedbacks (as of Oct. 2016)

- * Downscaled 20CR is available up to 1871.
- * Downscaling back to 1831 will be finished by ~ 20th October

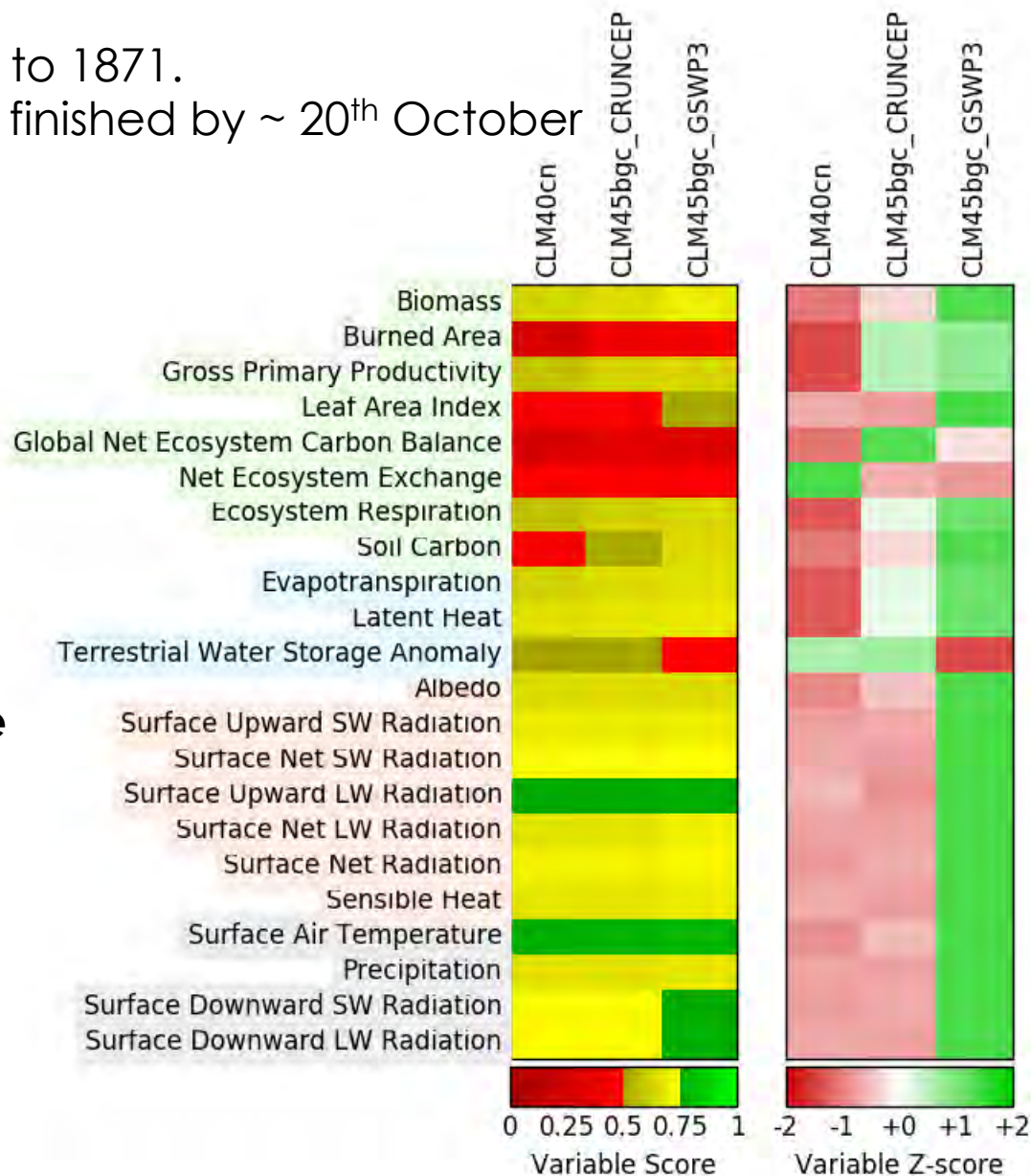
* **Strong trend of precipitation over high-latitudes during early 20th Century (David)**

* **Relatively strong surface wind speed (Hyungjun)**

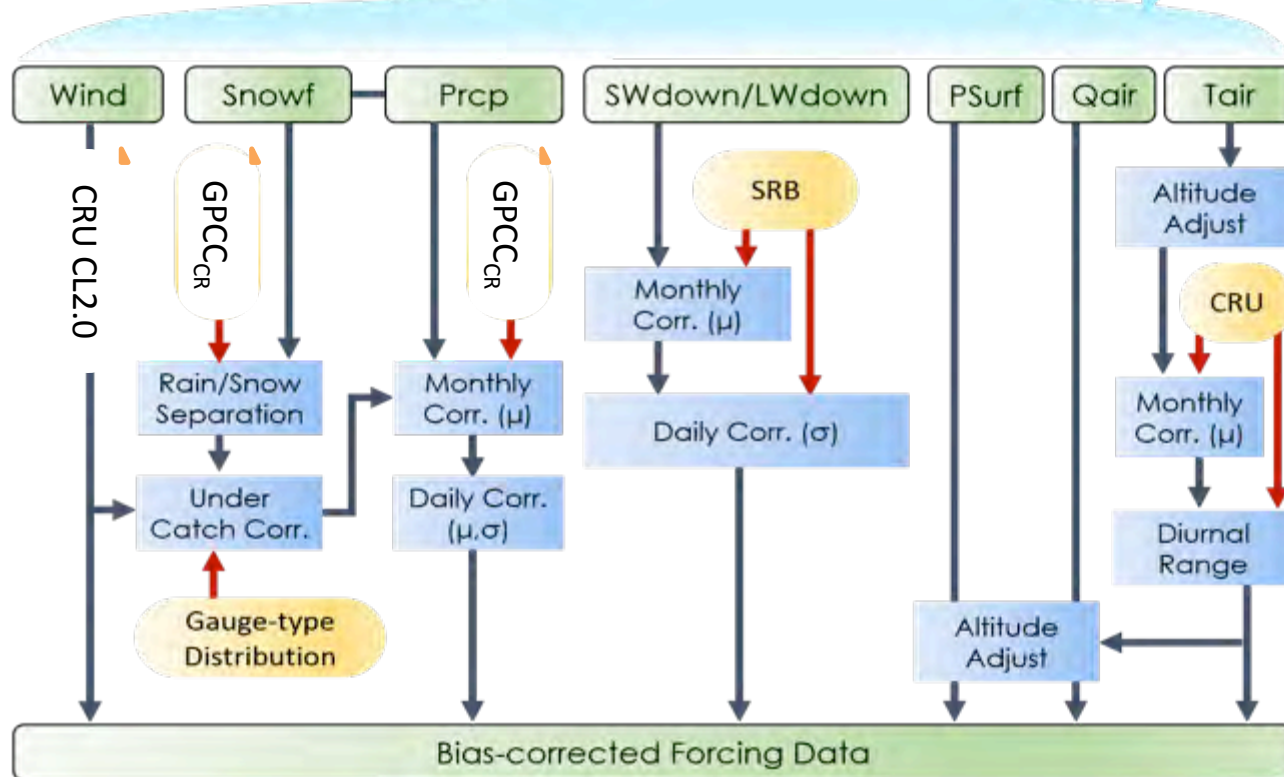
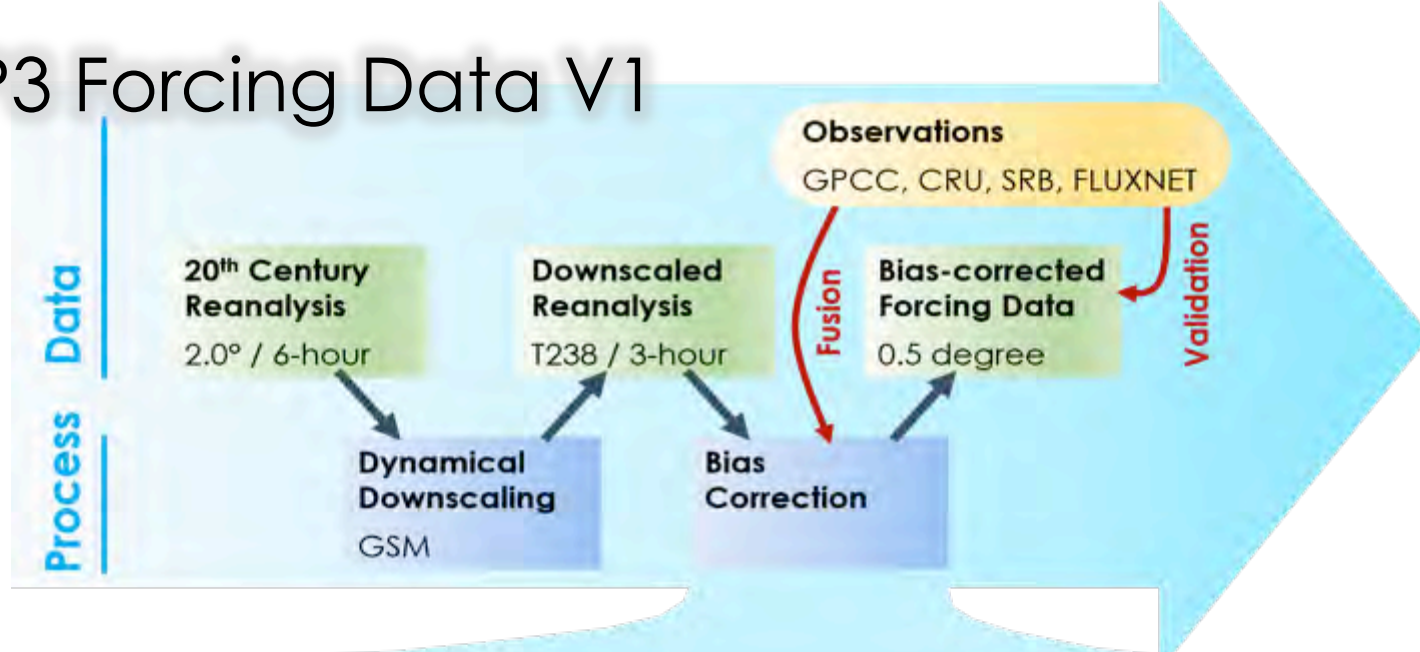
* **Dry Tropics (Bertrand, David, Stefan)**
: testing using CRU vapor pressure

* **Supersaturation High-latitudes (ECMWF, David)**

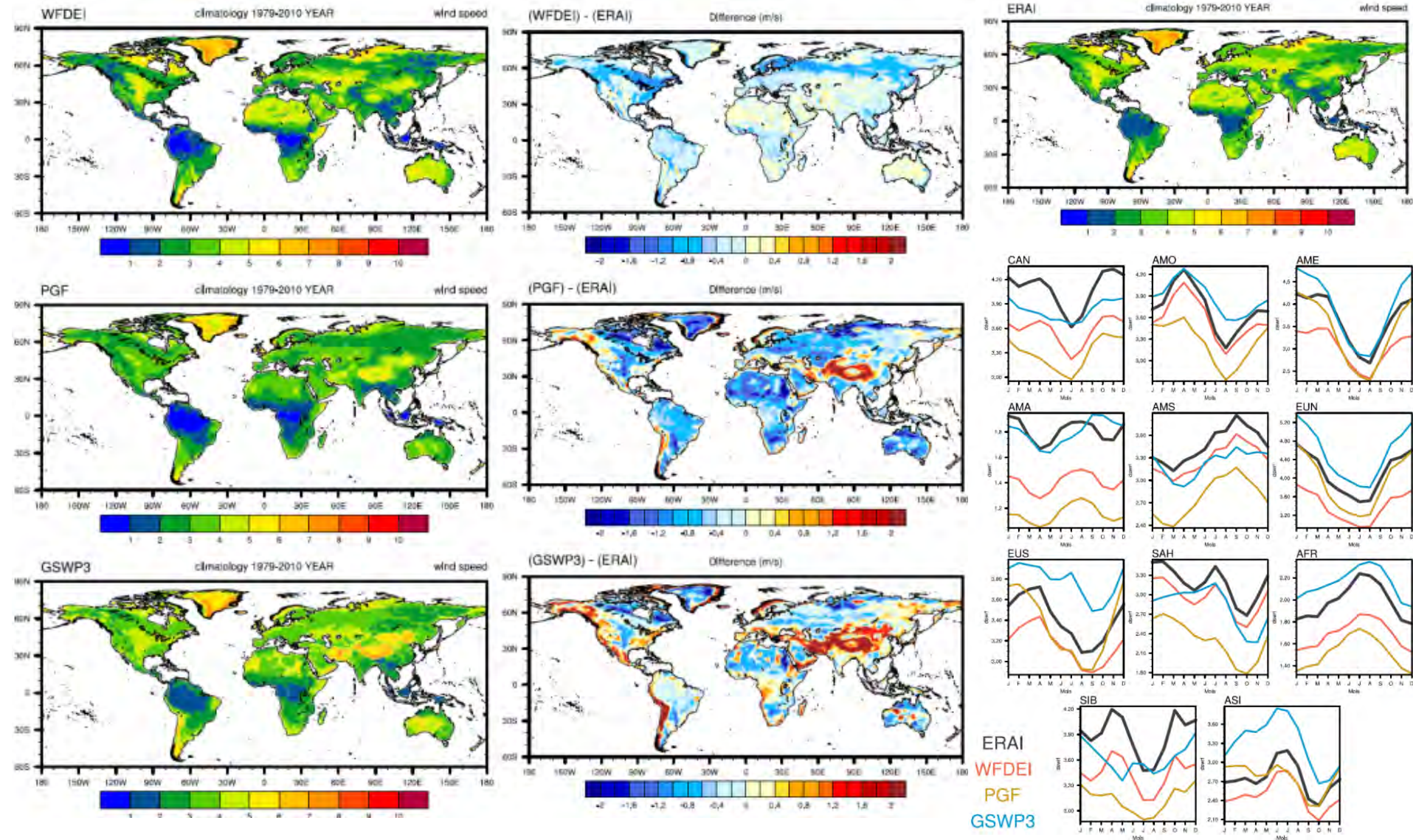
* **Specify cell-method (Jan)**
: attribute will be added
: e.g., mean(center)



GSWP3 Forcing Data V1



Wind Speed



Courtesy of Bertrand Decharme

Wind Speed

CRU CL2.0

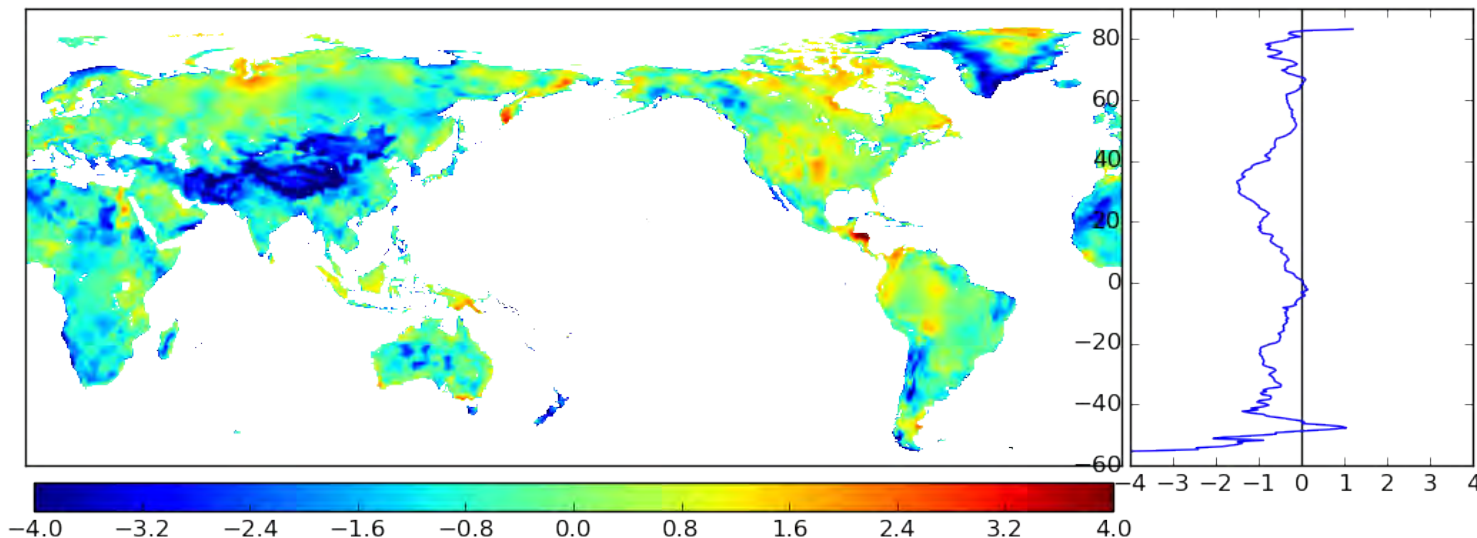
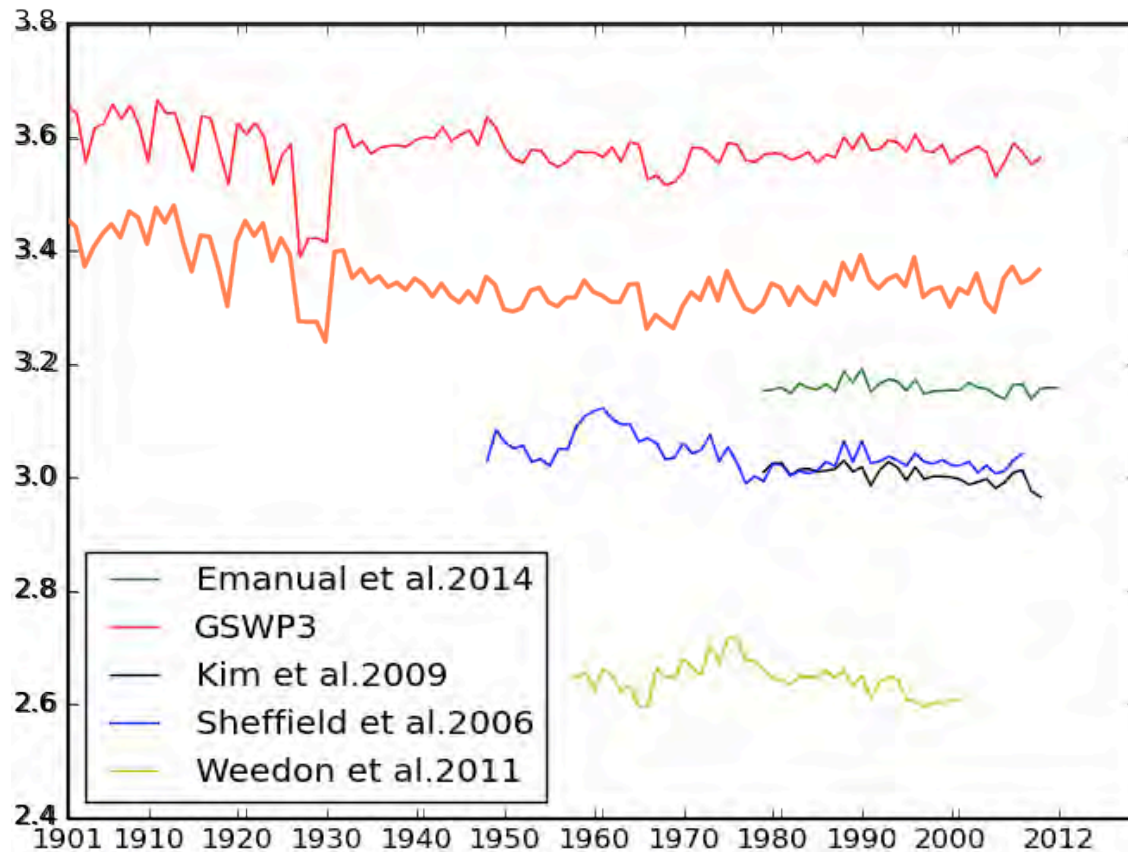
(New et al. 2002)

Climatology of 1961-1990

Global 10min

**Efficiently alleviate
overestimation**

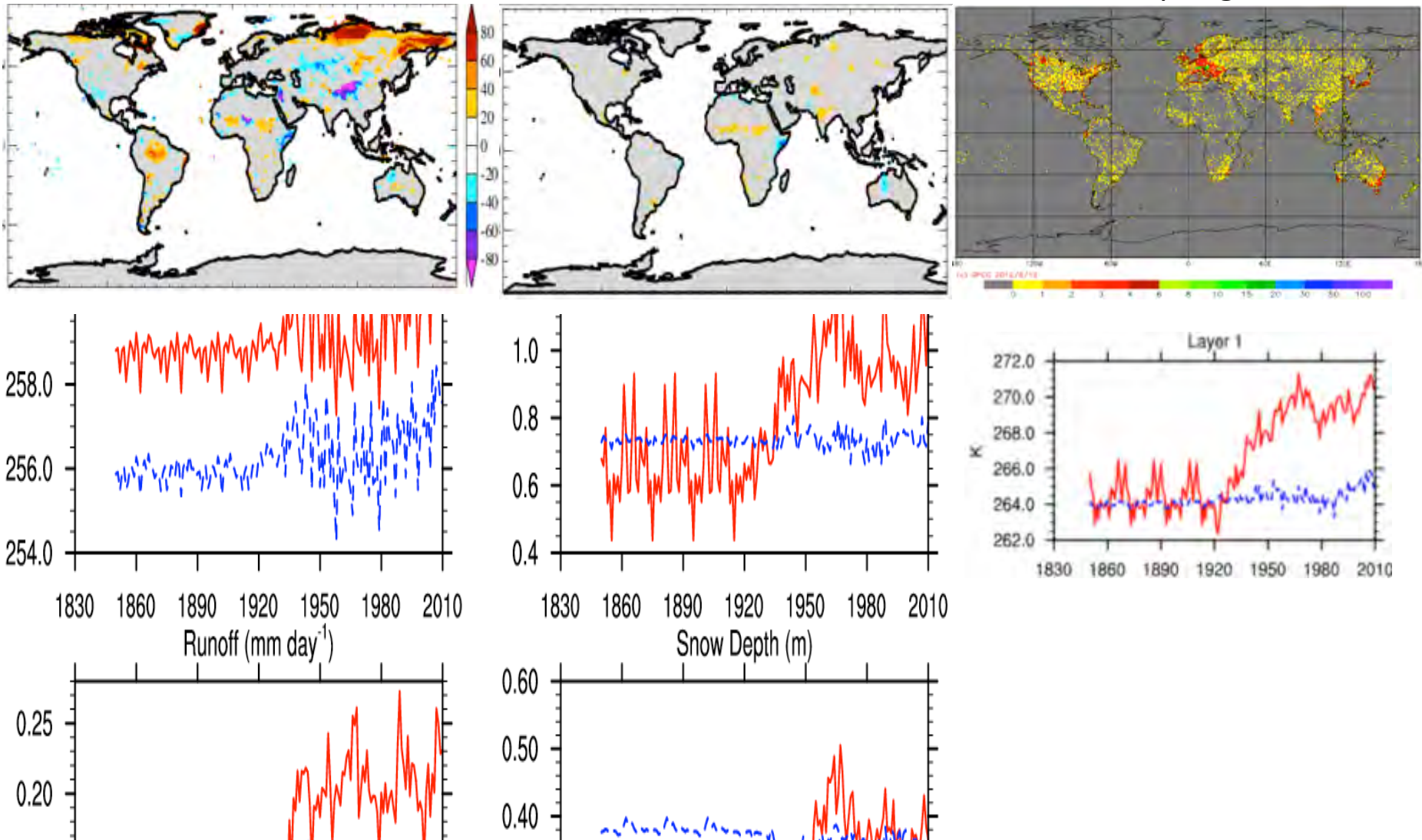
Sensitivity test underway



Preliminary Results and Known Problems

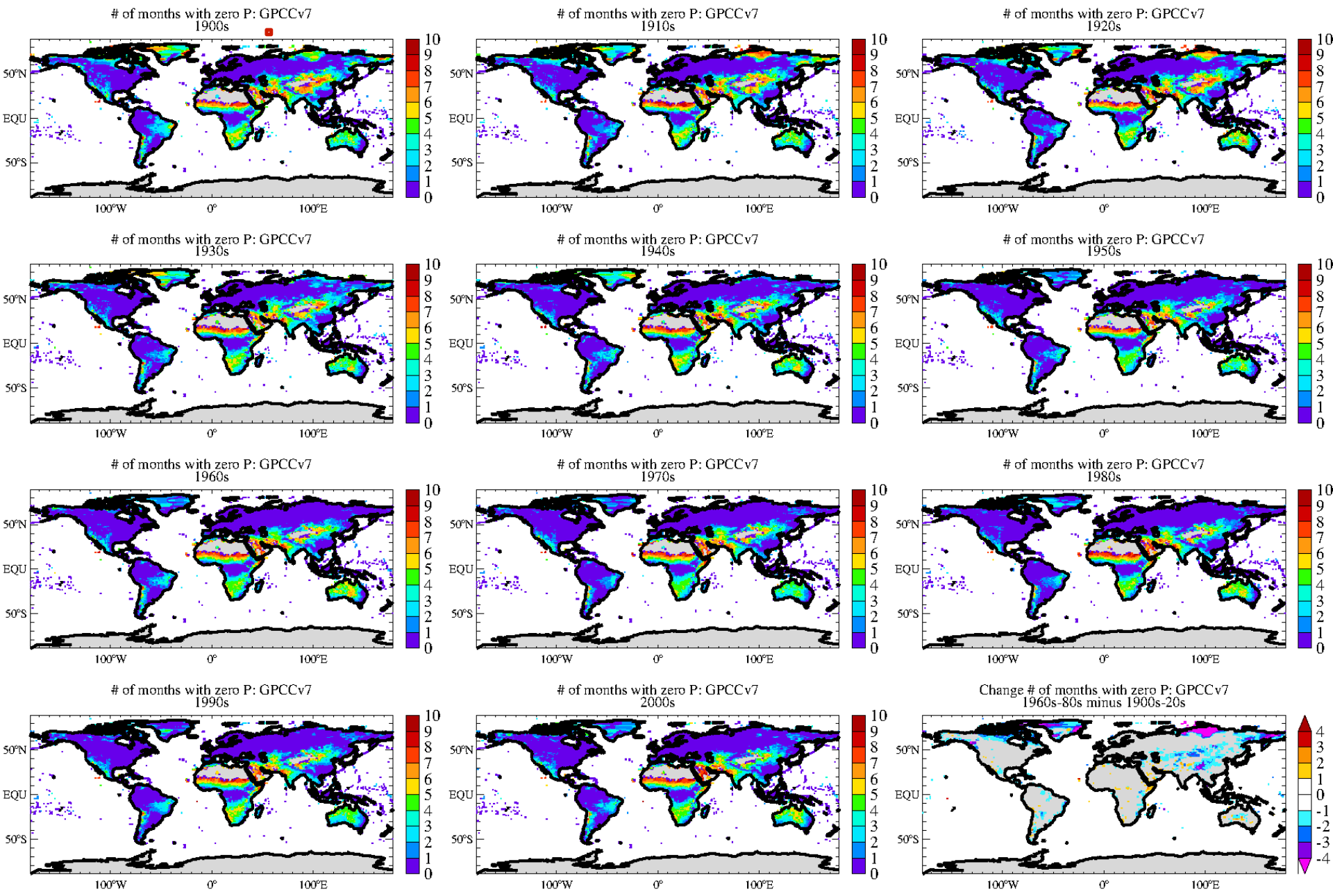
GSWP3 (GPCC) 1901-1955 % change in P CRUNCEP (CRU)

of stations per grid box GPCC



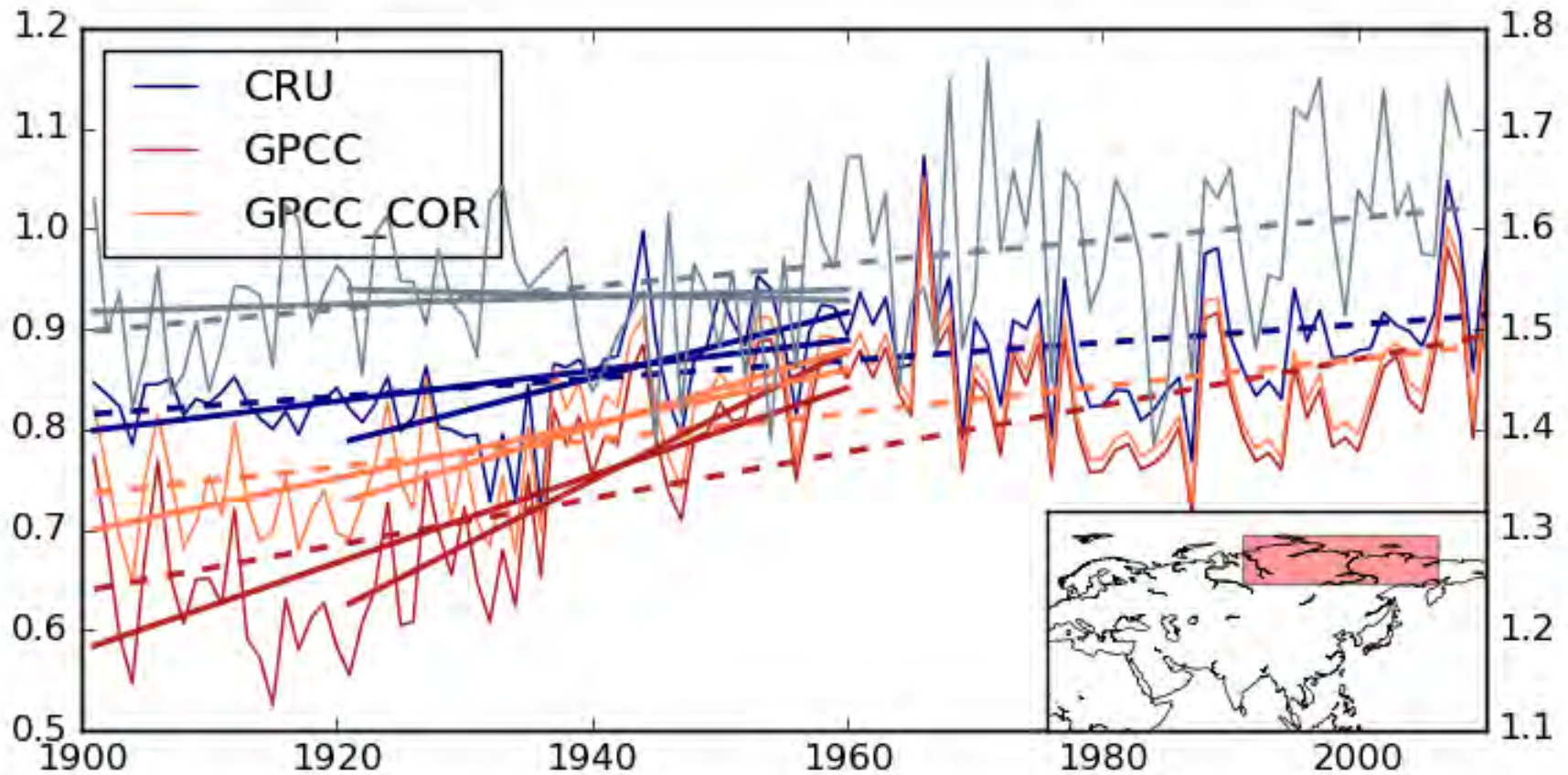
Analysis by D. Lawrence, NCAR

Preliminary Results and Known Problems



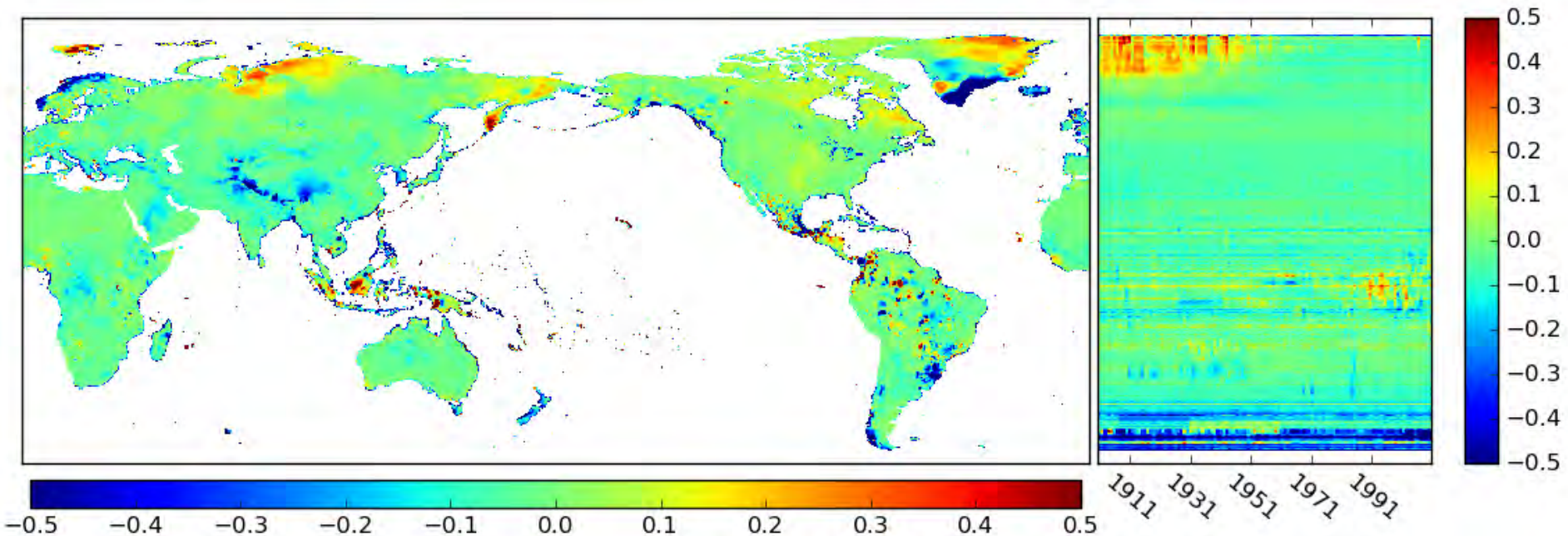
Preliminary Results and Known Problems

+ Spurious(?) trend at high latitude in early 20th Century



Updated Precipitation

- + GPCC version 6 to 7
- + Wind induced undercatch correction
- + Grid cells/months with zero P ($P_{1960-1990} > 0$) are replaced with climatology



Efficiently alleviate the trend in early 20th Century
Sensitivity test underway

Thank you!

