

GASS Report

GASS is of paramount importance to achieving GEWEX goals. It needs to be organized around significant overarching and coherent effort(s). It also needs to be:

- Relevant not only to GEWEX but also WGNE and WWRP
- Could/should be cross panel in scope

The following possibilities emerged out of discussion as important objectives that recognize GEWEX and WWRP goals

1) Quantify the role of land surface processes in S2S prediction?

- Here we want integrate GEWEX including GLASS and GABLS interests with WWRP. Activities/projects to be pursued include:
 - land monsoon project (TBD) with one part possibly TP centric
 - YMC & interseasonal variability
 - precipitation initiative
 - Convectively permitting hi-resolution modeling
- These would Contribute to AA1., AA3 and AA7

2) Advance our ability to estimate and predict precipitation by enhancing our understanding and representation of processes (aerosol, cloud environmental couplings) fundamental to precipitation.

- Activities relevant here include
 - Warm rain PROES
 - UTCC PROES
 - GDAP precipitation assessment
 - Precipitation initiative
 - GAP – microphysical influences (including aerosol) on precipitation.
 - Convection via YMC
- Definitely AA1 and AA7, indirectly AA2

3) Identify the mechanisms for the diurnal cycle of precipitation over different regions and how can we improve model representation of the diurnal cycle?

- TBD
 - Precip initiative and GDAP precip assessment
 - Hi res modeling (4 below) quite relevant and could be one focus of hires modeling
- AA1 and AA7

4) Assess the extent that resolved/permited convection is necessary to advance our ability to predict high impact weather.

- Activities include:
 - Greyzone project (the second phase of this cloud/should be developed jointly with WWRP and perhaps WGNE)
 - We have Hi res modeling efforts underway that need further expansion
 - YMC is likely a highly relevant contributor

- Precipitation initiative
- AA1 broadly, AA2 more specifically and AA7

Some GASS activities that underpin these questions (but far from enough)

- Precipitation, convection observations, precipitation assessment efforts and the WCRP precipitation initiative
- PROES studies particularly those that connect clouds and convection and model exploration of those processes
- GAP aerosol & microphysical processes on precipitation
- And a new potential one being explored – GEWEX lead role in the Year(s) of Maritime Convection (YMC, Chidong Zhang)