Welcome to 3rd ACRE workshop

GOALS:

1.Shape the efficient use of the products ACRE is both producing and facilitating with its international partners in the context of national and international climate services.

2. Bring together users of the historical weather reanalyses – from climate researchers, the diverse climate applications community, to educators and students.

3.Address the provision of useful results that can be easily and readily applied worldwide.

4.Provide a venue where the results of interactions between ACRE, Google, IBM and Microsoft in the area of citizen science, massive scale data handling and web-based, state-of-the-art high resolution visualizations of the data and reanalyses products can be addressed.

5.Continue to move forward so that the full impact of the output and outreach from the international ACRE initiative is as user friendly, tailored and shaped as possible.

The Workshop would like to thank the National Science Foundation, National Oceanic and Atmospheric Administration, National Integrated Drought Information System, National Aeronautics and Space Administration, US Global Climate Observing System Program at NOAA's National Climatic Data Center, and PlatinumRe for their support.

Summary of ACRE Joint Day 1 with US Workshop on the evaluation of recent reanalyses and steps towards an integrated Earth System Analysis

Several talks on importance of reanalysis and strengths and weaknesses of atmospheric and oceanic reanalysis datasets for a variety of climate of weather applications:

Droughts and Floods
Tropical Madden-Julian Oscillation
Tropical Cyclones
Weather extremes (100 years should be enough)
Land hydrology
Air-sea fluxes
Greenland Ice Sheet surface mass balance
Atlantic Meridional Overturning Circulation
Renewal Energy decision making

Looking to including Ocean Biogeochemistry in future high-resolution reanalyses.

Extended discussion of user needs: higher resolution in space in time, expert and responsive description of the reanalysis datasets and their strengths and weaknesses. Reanalyses.org collaborative website.

Five Climate Reanalysis Types in Integrated Earth System Analysis (IESA)

1. Reanalysis – Surface Instrumental (as far back as possible 1780s?? , possibly coupled)
2. Reanalysis –Upper air (using all available upper-air and surface, back to ~1950, possibly coupled)
3. Reanalysis – Satellite (using all available data, back to ~1979, coupled Ocean-Land-Atmosphere-Ice)
4. Reanalysis – Constituents (using all available data, back to 2000?, need Argo, key satellites, coupled O-L-A-I-BioGeoChem)
5. Reanalysis – Regional (possible for all 4).