

Workshop on the Physics of Weather and Climate Models

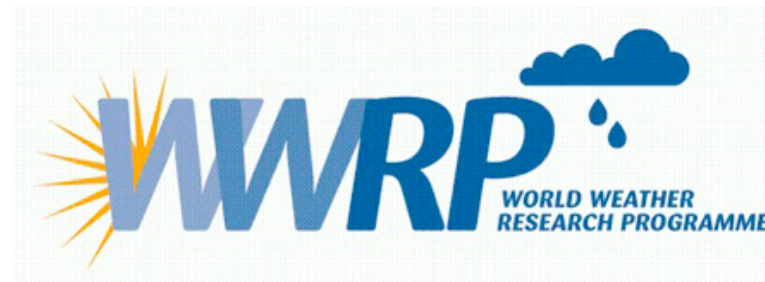
20-23 March 2012

Beckman Institute, Caltech, Pasadena, California



THANKS

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Workshop structure

- 3.5 days, morning lectures, afternoon breakouts, evening topical discussions
- About 120 participants, 40 of which were students
- Lecture topics:
 - Tropics,
 - High Latitudes,
 - Clouds

Workshop structure

- Breakouts
 - Field experiments, Physics in weather prediction, Physics in Climate models
 - Global high-resolution models, Ensembles and stochastic physics, Simple models
 - LES and physics development, Satellite observations and physics development, Model evaluation

Workshop structure

- Evening panel discussions
 - Strategies for model physics development
 - Careers in model physics
 - Institutional support for model physics development
- Final session to derive recommendations

The “big” recommendations

- Recognition of the problem that ratio of real development to claimed development is silly
- Improve funding around model physics development:
 - length of funding needs increasing
 - commit to some really key issues and stick to them until improvements are truly made
 - support both large teams and small targeted efforts
 - More honesty in reporting success
 - Model development tax or levy?

The “big” recommendations

- Focus on addressing long-standing issues
 - Climate sensitivity alone is the wrong metric
 - Enabling the community to succeed in Earth System Modelling and prediction on all time scales
 - Biases and variability, Precipitation, Extremes
 - Physics improvement central to this
 - Do not follow every new fad and leave the existing problems behind
 - Support regional climate projections through improved global models and RCM physics

The “big” recommendations

- Growing the model developer species
 - Links to academia using complementing strengths of both communities
 - Improve Recognition including prizes
 - Targeted programs including scholarships
 - Co-Authorship and citation culture
 - Building a community – e.g. advert areas etc
 - Fund meetings of this community

The “big” recommendations

- Coordinated effort in model evaluation in support of model physics development?
 - A la GCSS
 - Coordinated by W-acronyms?
 - All time-scales
 - Strong links to observational community can be made here

The big recommendations

- Communication
 - Be more optimistic but remain honest
 - Present the field as an exciting research area
 - Present our needs to other communities
 - Be bold