## WMAC-2 report

John Mitchell and Christian Jakob WMAC Co-Chairs

## Introductory remarks

- Second meeting -> Started action after last year's existential discussions
- Still struggling to get everyone to come -> partly caused by meeting format (see later)
- Great discussions with those who did come

#### Grand Challenges

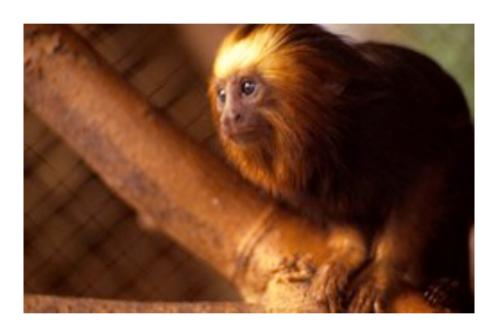
- Found it difficult to discuss them before hearing reports. Written input only.
- Many of the GC goals require major improvements to models -> There appears to be no strategy how to achieve this.
- Concern that an already stretched modeling community will be even more fragmented.
- More thought on coordination of activities is required. -> Topic for WMAC-3?

#### CMIP6

- CMIP6 planning is beginning in less than 3 months!
- The community has barely recovered from CMIP5, with results indicating little progress from CMIP3!
- Just as for the GCs, to remain credible we need more time and a strategy to significantly improve models.
- What is our strategy to achieve this?

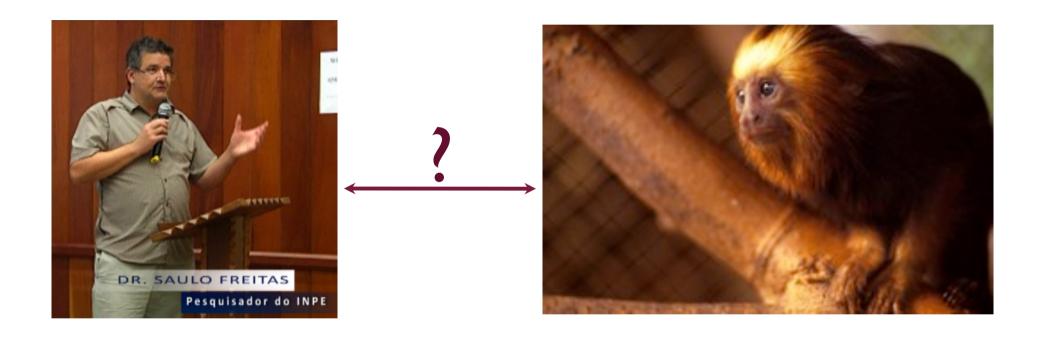
"An endangered species is a population of organisms which is at risk of becoming extinct because it is either few in numbers, or threatened by changing environmental or predation parameters." - Wikipedia

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Golden Lion Tamarin

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Model developer

Golden Lion Tamarin

# Promote model development

- Promote the establishment of several prizes for significant contributions to model development
  - Focus on early career scientists
  - Options: National Services, WMO, AMS, RMS, AGU, EGU, EMS, etc.
  - Small WMAC task team has been formed

## Promote model development

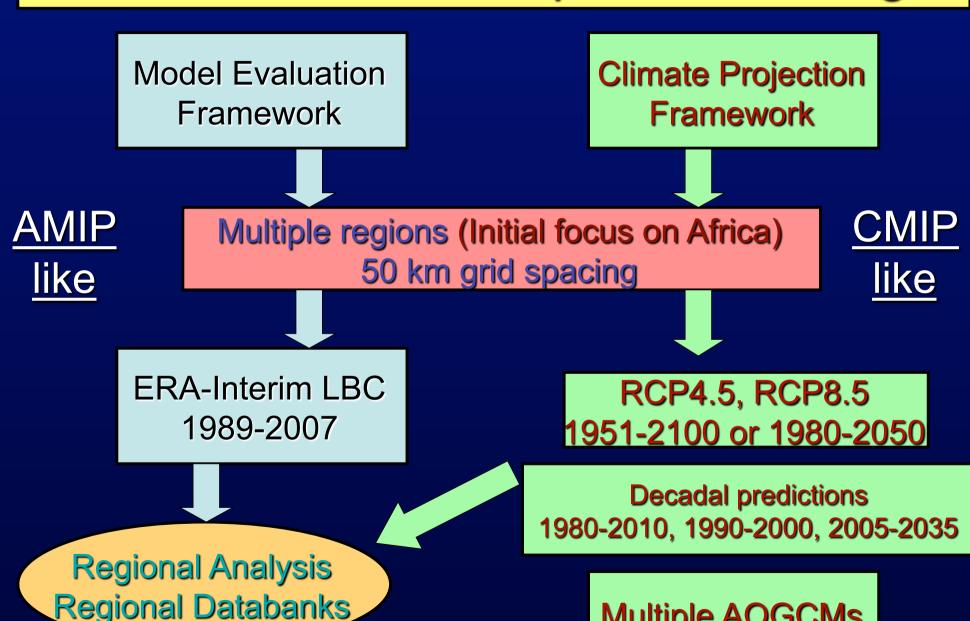
#### Summer Schools on model development

- Most summer schools on modeling are either focussed on running models or on numerical methods.
- Little to no training in details of model physics true for all spheres
- Proposal: Organize summer school(s) on model development that focus on parametrization (e.g., like ECMWF training course).
- Small task team has been formed (GC4+WGOMD+GASS+GLASS)

## Regional climate

 Concerns about model evaluation in CORDEX

#### CORDEX Phase I experiment design



Multiple AOGCMs

#### Regional climate

- Concerns about model evaluation in CORDEX
- Proposal:
  - Include experiments forced at the boundaries with historical GCM simulations in the Model Evaluation Framework
  - Have a dedicated evaluation effort under WGRC (don't leave it to the users)

#### **ESGF**

- WMAC sees ESGF as the main mechanism for exchanging data (mod+obs+ana) in the WCRP in the next decade.
- This will have important implications not all of which are fully understood.
- Buy-in from some WCRP activities exists (e.g., CMIP, CHFP, CORDEX, OBS4MIPS, ANA4MIPS).
- Core project involvement requires some more thought

#### **ESGF**

- Recommendations:
  - JSC to endorse ESGF as data exchange mechanism and discuss core project involvement
  - Consultation with ESGF to determine details
  - Leave determination of internal structure to ESGF
  - Replace Review Board by an Advisory Board with membership drawn from relevant partners, including WCRP

#### Workshops

- Proposal: Workshop on model "tuning"
  - WMAC supportive of general idea
  - WGCM to lead
  - Cover all aspects of tuning from process level to coupled system
  - discuss making documentation of tuning process a requirement for participation in CMIP6
- Dynamics-Physics coupling

#### Workshops

- Workshop on Dynamics-Physics coupling
  - How do dynamical and physical process couple in the general circulation and how well is this coupling represented in models? -> Key to regional climate prediction
  - Currently dealt with in separate communities ->
    Danger of fragmentation
  - Potential partners: GC4, GASS and SPARC
  - Recommendation: Form a small group to define workshop goals and outline led by GASS

### Organization

- WMAC Membership
  - WGRC representative: Keep current arrangement for one more year, then have a WGRC rep
  - WWRP representative: Still considered desirable by the committee

## Organization

- Meeting structure
- Issues:
  - struggle to attract members to attend I-day meeting
  - unnecessary duplication of reporting with main JSC meeting
- Proposal
  - Make WMAC a "3-day" meeting with the JSC
  - Structure: Mon am WMAC PI; Mon pm Wed am Joint with JSC, all key reports happen there; Wed pm WMAC P2;
    - Thu am Report to JSC

### Other things

- WMAC endorses proposal that CMIP6 Decadal Prediction activities are coordinated through WGSIP+WGCM +CLIVAR
- Recommendation: WDAC to lead new effort on coordinating activities on surface fluxes -> GEWEX products, SURFA, Reanalyses