II LBA Model Intercomparison Project Workshop

May 2-3, 2008
University of Maryland Inn & Conference Center
Adelphi, MD

WELCOME

Luis Gustavo de Goncalves (NASA-Goddard) and Scott Saleska (U of Arizona)

II LBA Model Intercomparison Project Workshop

- ➤ **Participants Introduction**

- ➤ **Agenda**

- ➤ **Status Report**

- ➤ **Some issues**

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AGENDA
DAY 1 (2 May)

Introduction, motivation, and status report

9:00 -- Welcome and overview of LBA-MIP motivation and goals
Luis Gustavo de Goncalves (NASA-Goddard) and Scott Saleska (U of Arizona)
(including status report on model runs, brief discussion of issues encountered, etc.)
-- discussion

9:30 -- The data drivers: status report and discussion about data drivers used
Natalia Restrepo-Coupe (University of
Arizona)
-- discussion

9:45 -- What are the models? a template for characterization
Marcos Costa (Universidade de Vicosa) & Natalia Restrepo-Coupe

II. Model Intercomparisons #1: looking across models

10:00 -- Carbon Flux Intercomparisons -- Ian Baker (Colorado State University)

Coffee Break (10:30-11:00)

11:00 Water Balance and ET Partitioning -- Brad Christoffersen (University of Arizona)

11:30 Energy Balance and Partitoning -- Ben Poulter (Postdam University)

12:00 – Discussion of LBA Data Policy, Peter Griffith (NASA/GSFC LBA-ECO)

12:15 – General Discussion

12:30 – Lunch

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AGENDA

DAY 1 (2 May)

14:00 – <u>Seasonality of Energy, Water and Carbon</u>
Hewlley Imbuzeiro (Universidade de Vicosa)
14:30 -- <u>General Model Intercomparison</u> Luis Gustavo Goncalves (NASA/GSFC ESSIC)
15:00 – Next Steps for LBA-MIP: plan for analysis and writing
-- Initial general discussion to produce 4 main topical areas:
-- For example (subject to discussion):
a. diurnal, seasonal, and interannual patterns in **water & energy flux**
b. diurnal, seasonal, and interannual patterns in **carbon fluxes**
c. Process controls on seasonal transitions (dry→ wet, wet→ dry)
d. Process controls: what is the effect of dry-season length?
(note: this is intended to be very open and subject to adaptation to interests and capabilities)

Coffee Break (15:30 – 16:00)
16:00 – Break into groups to discuss 4 main topics for analysis and writing
(task: produce a strawman outline)

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DAY 2 (3 May)

9:00 Summary of Day 1 discussions
9:15 -- What are the models - Redux (a **filled in** template for model characterization)

New Models & lessons
9:30 Importance of seasonal Leaf Dynamics in ED2: implications for accurate modeling of seasonality
-- Paul Moorcroft (Harvard University)
10:00 LM3V, a new land model for the GFDL GCM (Lena Shvliakova and/or Justin Fisk)
10:30 Break (no coffee provided)
11:00 Land-Atmosphere Model Coupling
11:30 Next Steps for LBA-MIP #2: further discussion of plan for analysis and writing
12:00 Opportunities with North American Carbon Project (NACP) Site Model Data Comparison
-- Kevin Schaefer
12:30 Award Ceremony: Luminaries and Laggards (i.e. which models/groups made things easy and tough on Gustavo)
12:45 LUNCH BREAK (on your own in hotel)
14:00 Wrap-up

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Overview and MIP Goals

Some important questions we want to answer

➢*How well land surface schemes can reproduce terrestrial water, energy and CO2 in tropical environments (i.e. Amazonia)*

➢*Can these models represent the seasonal patterns of the tropical forest*

➢*Given the knowledge acquired during LBA how much could these models be improved*

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STATUS REPORT

Table 1A. Eddy covariance tower sites providing driver data for LBA-MIP

ID	Short Code	Site Name	Longitude [deg]	Latitude [deg]	Elev. [m]	Tower Height [m]	Biome Type	IGBP Link
1	BAN	Javaes River - Bananal Island	-50.159111	-09.824417	120	40	Forest-Savanna	4
2	K34	Manaus Km34	-60.209297	-02.609097	130	50	Tropical rainforest	2
3	K67	Santarém Km67	-54.958889	-02.856667	130	63	Tropical rainforest	2
4	K77	Santarém Km77	-54.894357	-03.019833	130	18	Pasture-Agriculture	12
5	K83	Santarém Km83	-54.971435	-03.018029	130	64	Selectively logged tropical rainforest	2
6	RJA	Reserva Jarú	-61.930903	-10.083194	191	60	Tropical dry forest	2
7	FNS	Fazenda Nossa Senhora	-62.357222	-10.761806	306	8.5	Pasture	12
8	PDG	Reserva Pe-de-Gigante	-47.649889	-21.619472	690	21	Savanna	9

Table 2. Site-specific Availability of continuously filled driver data

	1999	2000	2001	2002	2003	2004	2005	2006
1. BAN						■	■	
2. K34				■	■	■		
3. K67				■	■	■		
4. K77			■	■				
5. K83			■					
6. RJA		■	■	■				
7. FNS	■	■	■					
8. PDG			■	■	■			

Figures extracted from LBA-MIP protocol documentation
See http://www.climatemodeling.org/lba-mip for more details

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➢**21 Participant Models (30 experiments)**
  - ➢*SSiB2 (3 exp)*
  - ➢*BIOME-BGC*
  - ➢*SiB3*
  - ➢*LPJ (2 exp)*
  - ➢*HYLAND*
  - ➢*JULES*
  - ➢*SPA (3 exp)*
  - ➢*CLM V3.5 (2 exp), V3.0DP, V3.0GW, V3.0 OOTB*
  - ➢*SIB-CASA*
  - ➢*ORCHIDEE*
  - ➢*VISIT (3 exp)*
  - ➢*CoLM*
  - ➢*IBIS*
  - ➢*5PM*
  - ➢*SiB2 (2 exp)*
  - ➢*NOAH DV, STD*
  - ➢*LM3V*

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ISSUES AND DIFFICULTIES FOUND

➢ *Late Submissions*

➢ *Misspelled Variable Names*

➢ *Wrong ALMA Format*

➢ *Wrong Units*

➢ *Non-NetCDF files*

➢ *LAI*