LBA Data-Model Intercomparison Project Workshop

April 18-19, 2011 Biosphere 2, Arizona, USA

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Meeting Goals

- ***Discuss the progress made on the proposed papers***
- ***Plan for the basin-scale simulations over the Amazon***

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Summary of Day 1

- ***Discuss the progress made on the proposed papers***

Papers are at various development stages but we agreed with September 1 as the deadline for submissions to the Agr. and For. Met. Special Issue

Some papers still need co-authors (e.g. D.Roberti is working alone!)

There were great comments and suggestions during presentations however authors may need more. Need to work on the LBA-DMIP wiki page to facilitate the discussions

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Summary of Day 1

- ***Discuss the progress made on the proposed papers***

There are 2 critical (but not show-stoppers) papers that need to be finished ASAP: overview and uncertainty analysis of fluxes

Gustavo is taking the lead (with Marcos Costa) on the overview paper and will be recruiting other co-authors SOON

As soon as we hear back from Natalia, Kevin and Aaron/Joshua may help her expedite the process

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Summary of Day 1

- ***Discuss the progress made on the proposed papers***

Author Policy

Main authors + 1 author per site + 1 author per model in every manuscript
include everyone and leave to each of them to decide whether they wish to be opted-out or not

Other Comments

- Papers on soil temperature and soil respiration
- Combining some of the papers together (overlapping)

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Summary of Day 1

	N	Status	Title	Who
Editorial Summary	0		Editorial	**Marcos Costa**
	1		Overview and synthesis paper: experiment overview and key results; target to receive most of the general citations of the experiment. Data and models described in appendix.	**Luis Gustavo Goncalves**, Marcos Costa
	2		Conclusion/Closing	Marcos Costa
Model/Data Uncertainty	3		LW gap filling	Natalia Restrepo-Coupe, Koichi (?)
	4		Uncertainty analysis of fluxes	**Natalia Restrepo-Coupe**, Celso von Randow (Kevin and Aaron)
	5		Sensitivity of model-observation comparisons to filtering strategies	**Hewlley Imbuzeiro**, Marcos Costa
	6		Model skills, model uncertainties, and attributions	**Joshua Fisher**, Michel Muza, Ian Baker, Gustavo, João
	7		Comparison of model parameterizations across sites and models	**Hans Verbeeck**
Energ. Fluxes	8		Seasonality of Et fluxes across biomes	**Brad Christoffersen**, Joshua Fisher, Gonzalo Miguez-Macho
	9		Sensible and latent heat fluxes	**Alok Sahoo**, Debora Roberti
	10		Radiation fluxes	**Humberto Rocha,** Bruno Cestaro
Carbon Phenology	11		Seasonality of vegetation dynamics (GPP, LUE)	**Ben Poulter**
	12		CUE across biomes	David Galbraith
	13		NPP, LAI, C allocation	**Debora Roberti**
	14		What drives the seasonality of NEE?	**Ian Baker**, Humberto da Rocha
	15		Interannual variability	**Celso von Randow**, Dirceu, Scott Saleska, Ian Baker, Michel Muza
Other	16		Brazilian Ecosystems at diurnal to intra-seasonal timescales	**Joao Gerd**, Michel Muza, Gustavo de Goncalves
	17		Relationships between Brazilian Ecosystems and Pacific/Atlantic TSM, teleconection patters	**Michel Muza**, Luis Gustavo Goncalves
	18		Land use change at Km77	**Luciana**, Marcos Costa

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1. Brad
(a)bottom boundary (aquifer) not prescribed in the protocol. I may pose a real problem... how realistic are the results then?
(b) depth of the water table... 100m? Representative measurements of water table across the Amazon basin

2. Koichi
(a) LWNET applied to regional simulations
(b) Zeng: combine with reanalysis in a spatial dissagregations (use real cloud observations???)

3. Roberti
(a) not all models reported biomass and carbon pools
(b) check percentages/decimal numbers

4. Hewlley
(a) Ian: how do the models behave seasonally to the applied criteria
(b) what would be a good delta (criteria) can we help recommend
(c) Jim: why models keep the same spread structure as the criteria change
(d) Borak: minimum criteria
(e) Zeng: look also at the diurnal cycle to assess the model performances

5. Josh
(a) is R2 the more appropriated metric for all sites
(b) uncertainty in the data
(c) group models by characteristics

6. Celso
(a) implications of using steady-state as initial condition (spin-up?)

7. Michel
(a) Single El nino event for interannual variability?

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Plan for the basin-scale simulations over the Amazon

Back to the last workshop in Natal…

LBA-DMIP Phase 2

- Wall-to-wall simulations
- Setup domain, temporal (80's?) and spatial resolution
    - Moore datasets (
- Are the groups ready to do regional simulations? How can we help?
- Forcing options (prescribed)
- Ancillary data options (prescribed)
- How to evaluate the simulations (transects, inter/intra annual variability, "ENSOs")

AGU December/2010 (NACP/LBA-DMIP special session)

Start regional simulations on FEB (workshop Biosphere2 to wrap up phase 1)

Deadline for papers submissions (phase 1) 03/31/2011

Complete regional simulations late JUL

Workshop phase 2 AUG/SEP

OPTION 1

Temporal: 1980 – 2006
Resolution: 0.5 deg
Domain: 7154(4607)
Sensitivity:

OPTION 2

Temporal: 2000 - 2006
Resolution: 0.1 deg
Domain: 180930 (115159)
Sensitivity

OPTION 3

Both 1 and 2 w/o sensitivity

OPTION 4

Option 3 with sensitivity

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Plan for the basin-scale simulations over the Amazon

Scientific questions to answer while planning for this type of simulations

What are spatial patterns of processes across the Amazon?

With respect to climatic variability (ENSO, recent droughts?)

Interannual variability

Trends in Amazonia (NPP?)

Effects of land use change in the carbon cycle

Nemani et al.
2000 - 2010

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Plan for the basin-scale simulations over the Amazon

Technical questions to answer while planning for this type of simulations

Time Span: 2000 – 2010

Multiple Datasets: SALDAS, Era-Interim. MERRA, CSFR
CPTEC will prepare the data in 2-3 months

Domain: 20S-8N; 80W-45W

Resolution: 0.5 degree
Output: Monthly
Spin up: until reachs steady-state
Parameter maps: MsTMIP (Moore soils map)

Computational cost: let every individual resolve or look for a mainframe elsewehere? CPTEC?

Forcing and ancillary data. What are the options at basin scale? What

Release the datasets in a certain order starting July, 1st
1. MERRA

Submit simulations by October 1st

NEXT MEETING
AGU Fall-2011

NEXT WORKSHOP

When: March, 2012
Where: Brazil
What: discuss results on the regional simulations

Maceio

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Sunday, April 17
Arrival Day

Agenda

	Arrivals Airport, transfer to Biosphere, check-in, Box dinners	

Monday, April 18
Day 1: Site level simulations. Results, papers and special issue

Time	**Topic**	**Presenter *(in bold)***
07:30	**Registration**	**With Marianne**
07:30 – 08:30	**Breakfast**	
08:30	Opening/Introduction	**Luis Gustavo Goncalves and Scott Saleska**
08:45	Current status of the special issue at the Agricultural and Forest Meteorology/ Overview of the potential contributions	**Marcos Costa**
09:00	Seasonality of ET Fluxes Across Biomes	**Brad Christoffersen**
09:20	Long Wave Gap Filling	**Koichi Sakaguchi** (Natalia Restrepo-Coupe)
09:40	NPP, LAI and Carbon Allocation	**Debora Roberti**
10:00	**Coffe Break**	
10:30	Uncertainty Analysis of Fluxes	**Celso von Randow** (Natalia Restrepo-Coupe)
10:50	Sensitivity of Model-Observation Comparisons to Filtering Strategies	**Hewlley Imbuzeiro** (Marcos Costa)
11:10	Comparison of Model Parameterizations Across Sites and Models	**Marjolein de Weidt** (Hans Verbeek)
11 :30	What Drives the Seasonality of NEE?	**Ian Baker** (Humberto Rocha)
11:50	Brazilian Ecosystems at Diurnal to Intra-seasonal Timescales	**João Gerd** (Soni Y., Michel M, Luis Gustavo G.)
12:10	**Discussion**	

12:40	**Lunch**	
14:00	Model Skills, Model Uncertainties and Attributions	**Aaron Polhamus** (Joshua Fisher, Michel M., Ian B. Gustavo G., João G.)
14:20	Interannual Variability	**Celso von Randow** (Dirceu H., Scott S.. Ian B., Michel M.)
14:40	Sensible and Latent Heat Fluxes	**Alok Sahoo** (Debora R.)
15:00	**Coffee break**	
15:30	Relationship Between Brazilian Ecosystems and Pacific/Atlantic TSM, Teleconection Patterns	**Michel Muza** (Luis Gustavo G.)
15:50	Land Use Change at Km77	**Marcos Costa** (Luciana)
16:10	CUE Across Biomes	**David Galbraith**
16:30	Synthesis of the Day 1 and Discussions	**Ian Baker**/ Luis Gustavo
TDB	**Dinner at Biosphere 2**	

Tuesday, April 19
Day 2: DMIP phase 2, NACP collaboration and future plans

07:30 – 08:30	**Breakfast**	
09:00	Summary of previous day and Introduction to the regional simulations	**Luis Gustavo Goncalves and Ian Baker**
09:20	What can we learn from similar projects (Amazon-Andes, others?)	**Marcos Costa, Scott Saleska, Luis Gustavo Gonçalves, Brad Christoffersen**
09:40	An Overview of CPTEC-INPE	**Osvaldo Moraes**
10:00	Regional datasets and computing capabilities at CPTEC-INPE	**Dirceu Herdies**, Joao Gerd
10:20	**Coffe Break**	
11:00	Modeling the Carbon Balance of the Amazonian Rainforests: Resolving Ecological Controls on Net Ecosystem Productivity	**Robert Grant**
11:20	TBD	**Kevin Schaefer**
11:40	Which aspects of plant and soil behavior matter most in land surface	**Rafael Rosolem** (Shuttleworth, Gupta, de

12:00	**Lunch**	
13:40	Carbon Cycle and Basin-scale simulations using SiB3 over Amazonia	**Ian Baker**
14:00	Planning for the next DMIP phase	**Scott Saleska - Luis Gonçalves**
15:00	**Cofee Break**	
15:20	Planning for the next DMIP phase cont...	**Scott Saleska - Luis Gonçalves**
16:30	**Tour at B2**	
TBD	**Dinner**	

Wednesday, April 20
Departure Day

07:30 – 08:30	**Breakfast, Departures to Airport, Box Lunches**	

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Participants

Brad Christofferson
Scott Saleska
Phil Arkin
Ian Baker
Atul Jain
Aaron Polhamus
Jordan Borak
Dirceu Herdies
Alok Sahoo
Daniel Ricciuto
Soni Yatheendradas
Kevin Schaefer
Kazuhito Ichii
David Galbraith
Gonzalo Miguez
Robert Grant

Marcos Costa
Joao Gerd
Bruno Cestaro
Osvaldo Moraes
Luis Gustavo Goncalves
Michel Muza
Celso vonRandow
Marjolein DeWeidt
Hewlley Imbuzeiro
Debora Roberti
Rafael Rosolem
Koichi Sakaguchi
Jim Shuttleworth
Xubin Xeng

Support:
Marianne Ritter
Amanda Vieira

	Model	Contact
1	lpj.c1d	Ben Poulter
2	lpj.c1p	Ben Poulter
3	lpj.c2d	Ben Poulter
4	lpj.c2p	Ben Poulter
5	ED2.met	Naomi Levine
6	IBIS.c1	Hewlley Imbuzeiro
7	ORCHIDEE.c1	Hans Verbeeck
8	DLEM.c	Chaoqun Lu
9	SSiB2.c1	Alok Sahoo
10	SSiB2.c2	Alok Sahoo
11	SSiB2.c3	Alok Sahoo
12	SiB2.c1	Debora
13	modified SiB2	Bruno
14	SIB3	Ian Baker
15	Biome-BGC.c	Kazuhito Ichii
16	CN-CLASS	Altaf Arain
17	HTESSEL	van der Hurk
18	FUN	Joshua Fisher
19	LEAFHYDRO	Gonzalo Miguez-Macho
20	SiBCASA	Kevin Schafer
21	UTexas	Xiaodan Guan [x.guan@jsg.u
22	ISAM	Atul Jain
23	JULES	David Galbraith
24	CLM3	Brad Christoffersen
25	CLMDVGM	Brad Christoffersen
26	CLASS	Robert Grant
27	VISIT	Akihiko Ito