

GEOSS Americas/Caribbean Remote Sensing Workshop – Transforming Data into Products

26-30 November 2007

CPTEC/INPE Cachoeira Paulista - São Paulo

Agenda	Morning	Afternoon
Day 1 Monday 26 Nov.	9:00-9:15 Workshop Opening 9:15-9:45 Overview of Workshop 9:45-10:30 Review of Remote Sensing Fundamentals I 10:30-11:00 Multispectral Imager and Sounder Measurement Information Content 11:00-11:30 Coffee/Tea Break 11:30-12:30 Multispectral Imager and Sounder Measurement Information Content (con't)	12:30-14:00 Lunch Break 14:00-17:30 MODIS Data/Imagery (Lab Session & Break) 15:30-16:00 Coffee/Tea Break 18:00 - 19:30 Reception
Day 2 Tuesday 27 Nov.	8:30-9:30 Review of Remote Sensing Fundamentals II 9:30-10:30 MODIS Atmosphere, Land & Marine Products 10:30-11:00 Coffee/Tea Break 11:00-12:15 Ordering of MODIS Products 12:15-12:30 Direct Broadcast CIMSS Regional Assimilation System (DB-CRAS)	12:30-14:00 Lunch Break 14:00-17:30 MODIS Products (Lab Session & Break) 15:30-16:00 Coffee/Tea Break 17:30 Q/A Session
Day 3 Wednesday 28 Nov.	8:30-9:30 Review of Remote Sensing Fundamentals III 9:30-10:00 Overview of NOAA Geo Program 10:00-10:30 SSEC Remote Sensing Expertise 10:30-11:00 Coffee/Tea Break 11:00-12:30 Review of GOES-10 Imager	12:30-14:00 Lunch Break 14:00-17:30 GOES-10 Images/Products (Lab Session & Break) 15:30-16:00 Coffee/Tea Break 17:30 Q/A Session
Day 4 Thursday 29 Nov.	8:30-9:30 Review of Remote Sensing Fundamentals IV 9:30-10:30 Review of GOES-10 Sounder I 10:30-11:00 Coffee/Tea Break 11:00-12:30 Review of GOES-10 Sounder II	12:30-14:00 Lunch Break 14:00-17:30 GOES-10 Soundings (Lab Session & Break) 15:30-16:00 Coffee/Tea Break 17:30 Q/A Session 20:00 - 23:00 Banquet
Day 5 Friday 30 Nov.	8:30-11:30 Geo/Leo Integration (lab session & Break) 11:30-12:30 CPTEC Lecture I	12:30-14:00 Lunch Break 14:00-14:30 CPTEC Lecture II 14:30-16:00 Future Systems/Capabilities/Opportunities/Plans 16:00-16:30 Coffee/Tea Break 16:30-17:30 Workshop Review

Lecturers

ASP/B/STAR, NESDIS, NOAA USA	Timothy J. Schmit: Tim.J.Schmit@noaa.gov Gary S. Wade: gary.s.wade@noaa.gov
CIMSS/SSEC, UW-Madison USA	Allen Huang: allen.huang@ssec.wisc.edu , Kathleen Strabala: kathy.strabala@ssec.wisc.edu Tom Rink: tom.rink@ssec.wisc.edu
CPTEC/INPE Brazil	Leonardo Peres, Alberto Setzer, Milton Kampel, Luiz Machado, Rodrigo Souza, & Juan Ceballos

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Day 1: Monday, 26 November

9:00 Workshop Opening ([Local hosts](#))

9:15 Overview of Workshop ([Allen H.](#))

- Workshop Objective in support of GEOSS Americas/Caribbean NOAA Capability Building Effort
- Review of Geo & Leo Direct Broadcast Processing Systems

9:45 Review of Remote Sensing Fundamentals I ([Tim S. & Allen H.](#))

- Visible: RGB, Radiance and Reflectance
- Near Infrared: Absorption
- Infrared: Radiance and Brightness Temperature

10:30 Multispectral Imager and Sounder Measurement Information Content ([Kathy S.](#))

- MODIS measurement principals

11:00-11:30 Coffee/Tea Break

11:30 Multispectral Imager and Sounder Measurement Information Content ([Kathy S.](#))

- Cloud Masking
- True Color

12:30-14:00 Lunch Break

14:00-17:30 MODIS Data/Imagery (Lab Session) ([Kathy S.](#), [Tom R.](#) & All)

15:30-16:00 Coffee/Tea Break

- Creating True Color Image
- Hyperspectral Data Research Application (HYDRA) Visualization Hands-on Practice

18:00 - 19:30 Workshop Reception

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Day 2: Tuesday, 27 November

8:30 Review of Remote Sensing Fundamentals II (Tim S. & Allen H.)

- Visible and Near Infrared: Land/Ocean
- Planck Function
- Infrared: Thermal Sensitivity

9:30 MODIS Atmosphere, Land & Marine Products (Kathy S.)

- Cloud Phase
- Atmospheric Profiles
- Fire Detection
- Vegetation Index
- Sea Surface Temperature

10:30-11:00 Coffee/Tea Break

11:00 Ordering MODIS Products (Kathy S.)

12:15 Direct Broadcast (DB) CIMSS Regional Assimilation System (CRAS) (Allen H.)

- Assimilation of MODIS products in CRAS

12:30–14:00 Lunch Break

14:00-17:30 MODIS Products (Lab Session) (Kathy S., Tom R. & All)

15:30-16:00 Coffee/Tea Break

- Cloud Phase
- Vegetation Index
- Sea Surface Temperature

17:30 Q/A Session

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Day 3: Wednesday, 28 November

8:30-9:30 Review of Remote Sensing Fundamentals III (Allen H. & Tim S.)

- Radiative Transfer Equation in the Infrared

9:30-10:00 Overview of NOAA Geo Program (Gary W.)

10:00-10:30 SSEC Remote Sensing Expertise (Allen H.)

- SSEC Instrumentation, Field Experiment, Validation, and Analytical Sciences

10:30-11:00 Coffee/Tea Break

11:00-12:30 Introduction to GOES-10 (Tim S. & Gary W.)

- Instruments (Tim S.)
 - spectral bands and rationale, scanning pattern, ...
- Products/applications/Case Study(s) (Gary W.)
 - Processing Algorithms
 - Clouds, fog, synoptic and mesoscale patterns (imagery).
 - Winds, fires, SST, hurricane intensity, aviation concerns, etc.
- XGOHI (Tim S.)

12:30–14:00 Lunch Break

14:00-17:30 GOES-10 Images/Products (lab session) (Gary W., Tim S., Tom R., & All)

15:30-16:00 Coffee/Tea Break

- Multi-band applications
 - Images,
 - Animations,
 - Line plots, Differences,
 - Enhancements,
 - Comparison to MODIS, etc.
 - CTP (Cloud Top Pressure)

17:30 Q/A Session

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Day 4: Thursday, 29 November

8:30-9:30 Review of Remote Sensing Fundamentals IV (Allen H. & Tim S.)

- Infrared at High Spectral Resolution (Basic Principles and limitations)

9:30-10:30 Review of GOES-10 Sounder I (Tim S.)

- Instrument Overview
 - Bands, scanning pattern, etc.
 - Sounding Algorithms

10:30-11:00 Coffee/Tea Break

11:00-12:30 Review of GOES-10 Sounder II (Gary W.)

- Products/Applications/Case Study(s)
 - Vertical profiles, DPI, clouds, ozone
 - Winds
 - Operational aspects (OSDPD, NWS, and AWIPS)
 - Sample regional NWP assimilation (CRAS)

12:30–14:00 Lunch Break

14:00-17:30 GOES-10 Soundings (lab session)_(Tim S., Gary W., Tom R. & All)

15:30-16:00 Coffee/Tea Break

- Weighting functions,
- Forward model,
- Multi-band images, line plots, comparisons to imager...
- DPI (Derived Product Imagery) Case Study

17:30 Q/A Session

20:00 - 23:00 Workshop Banquet

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Day 5: Friday, 30 November

8:30-11:30 Geo/Leo Integration (lab session) (Kathy S., Tom R. & All) (include 30 minutes coffee/tea break)

- Geo/Leo Synergy Fire Detection

11:30-12:30 CPTEC Lecture I

- Dr. Leonardo Peres - Land Surface Temperature (NOAA, MSG)
- Dr. Alberto Setzer - Fire
- Dr. Milton Kampel - Sea Surface Temperature (NOAA, MSG)
- Dr. Luiz Machado - Nowcasting/Precipitation

12:30–14:00 Lunch Break

14:00-14:30 CPTEC Lecture II

- Dr. Rodrigo Souza - GOES-10/sounding
- Dr. Juan Ceballos - Cloud Classification

14:30-16:00 Future Systems/Capabilities/Opportunities/Plans (Tim S. & Allen H.)

- GOES-13 overview
- GOES-R overview
 - ABI
 - GLM
- AIRS Hyperspectral Sounder overview
- NPP/NPOESS overview

16:00-16:30 Coffee/Tea Break

16:30-17:30 Workshop Review and Conclusion (Hosts & Lecturers)

- Workshop Review and Synopsis (All)
- Workshop Discussions (All)
- Workshop Survey
- Certificate
- Workshop Concluding Remarks (All)