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LABORATÓRIO DE ANÁLISE E PROCESSAMENTO DE IMAGENS DE SATÉLITES

CWG, 2012  
27 – 30 March,  
Prague, Czech  
Republic

# Training Experiences from the **South American Group of EUMETCast Operators (SAGEO)**

Humberto Barbosa (LAPIS/UFAL)

## MOTIVATION:

- To improve access by Brazilian users to MSG data
- To ensure an adequate technical level of MSG Brazilian users

# Outline

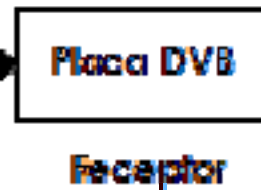
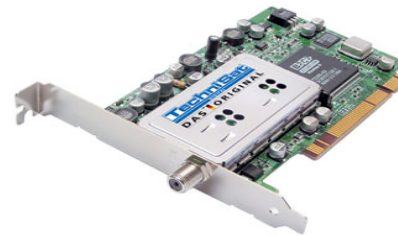
- **SAGEO: Concept and Activities**
  - SAGEO: Standard EUMETCast Stations
  - SAGEO: Training and Capacity Building
- **SAGEO: Research and Education**
  - University Engagements on Utilization of Meteosat-9 in Brazil
- **SAGEO: Training Opportunities**
- **Conclusions**





# SAGEO: Standard EUMETCast Station

>Experience in setting up ground receiving station in Brazil;



>Development of own software to handle incoming data stream from MSG



# SAGEO: Concept and Activities

❖ **SAGEO** has been established in September 2009 as a starting point for collaborative effort between **EUMETSAT workshops** and **EUMETCast Brazil Operators** to strengthen regional capacities of use MSG satellite data and products in Latin America.

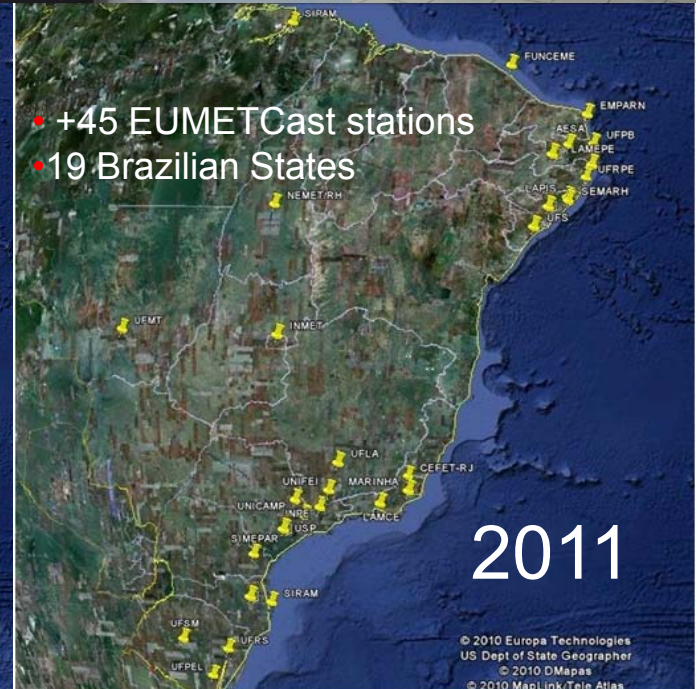
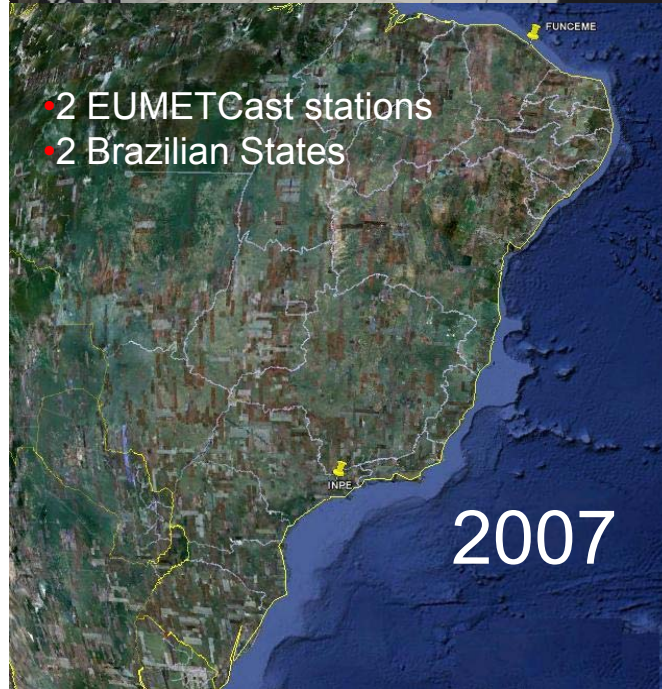
## SAGEO activities:

- The installation of a “standard” **EUMETCast station**, with an appropriate training for the operation of the station;
- Network of **experts** across the Brazil;
- Facilitating **the EUMETCast operators** with the visualization;
- Seeking **mechanisms** for regional partnership.





# SAGEO: III Meeting, Aug. 2011, Brazil



SAGEO: Concept  
and Activities

*SAGEO: III Meeting  
Aug.2011, Brazil*

*SAGEO: Training  
and Capacity  
Building*

SAGEO: Research  
and Education

*University  
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SAGEO: Training  
Opportunities

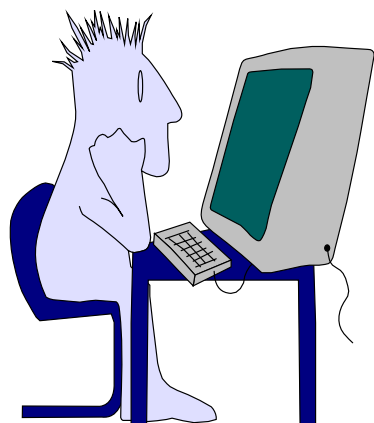
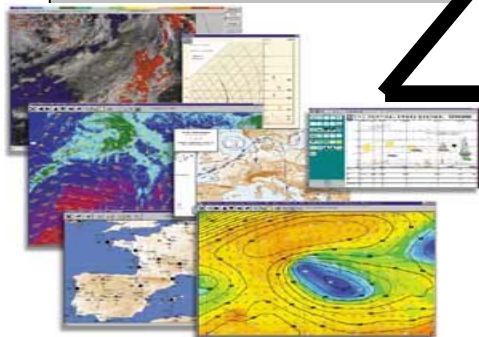
Conclusions



# Diffusion of Products

## Operational

TYPE of DATA



Need of "translate the information"

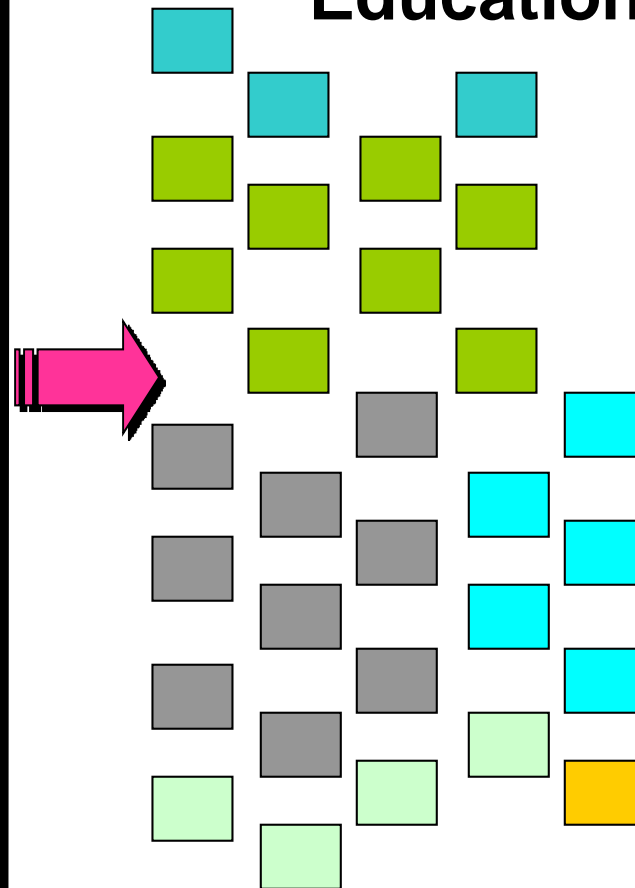
FORMAT ASC

STANDARD  
IMAGERY FORMAT  
(bmp, jpg, gif, png,  
tiff, etc)

ENCRYPTED  
FORMATS (bufr,  
hdf, grib, xrit...)

"providers"

## Education



"end-users"



**GAP**



Similarly to what happens in many other regions of the world, usually scientists plan and develop their methods on isolation, not grasping what was really required by relevant stakeholders.

On the other hand, stakeholders are unaware neither of what science or knowledge-based alternatives are available nor of their choices to tackle a specific productive or management problem.



# >>> build network based on complementarity

EUMETSAT  
Satellite  
Application  
Facilities



SAGEO: Concept  
and Activities

*Diffusion of  
Products*

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# SAGEO: Training and Capacity Building

- **Equipment**
  - Eumetcast receiving stations
- **Training sessions**
  - Data processing ...
  - Using Eumetcast receiving stations
- **Research and teaching**
  - New products and software
- **Validation and diffusion of products**
  - ground truthing measurements
  - data dissemination

# SAGEO: Training and Capacity Building

Training Experiences from the SAGEO



SAGEO: Concept and Activities

*SAGEO: Standard EUMETCast station*

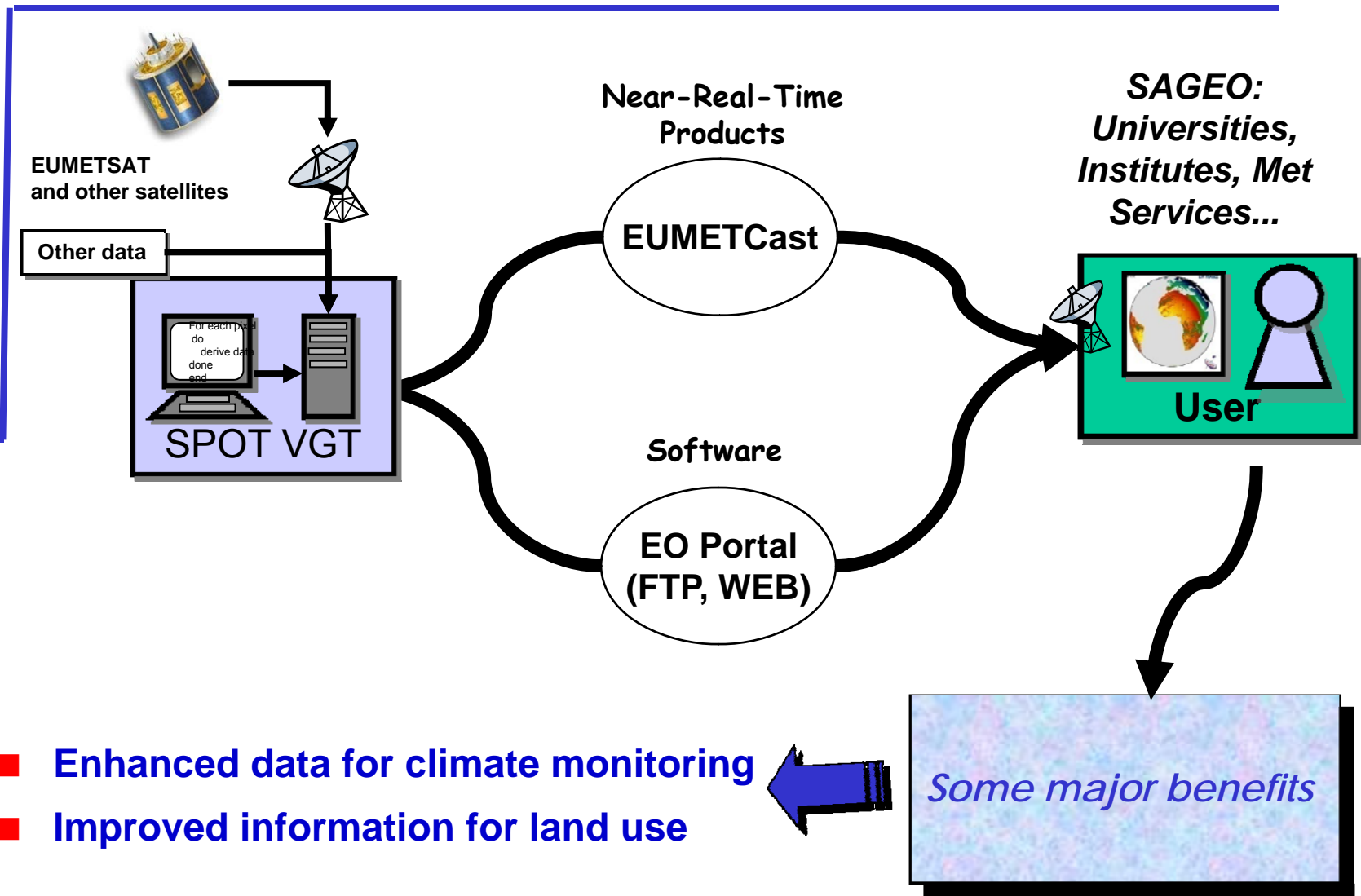
*SAGEO: Training and Capacity Building*

SAGEO: Research and Education

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# SAGEO: Training and Capacity Building

>**SALGEO meetings** are forums of exchange of knowledge and experience among representatives of data suppliers (EUMETSAT and VITO), research groups (INPE, EMBRAPA, etc) and National Meteorological Institutions (INMET, etc);

>**Training aspects:**

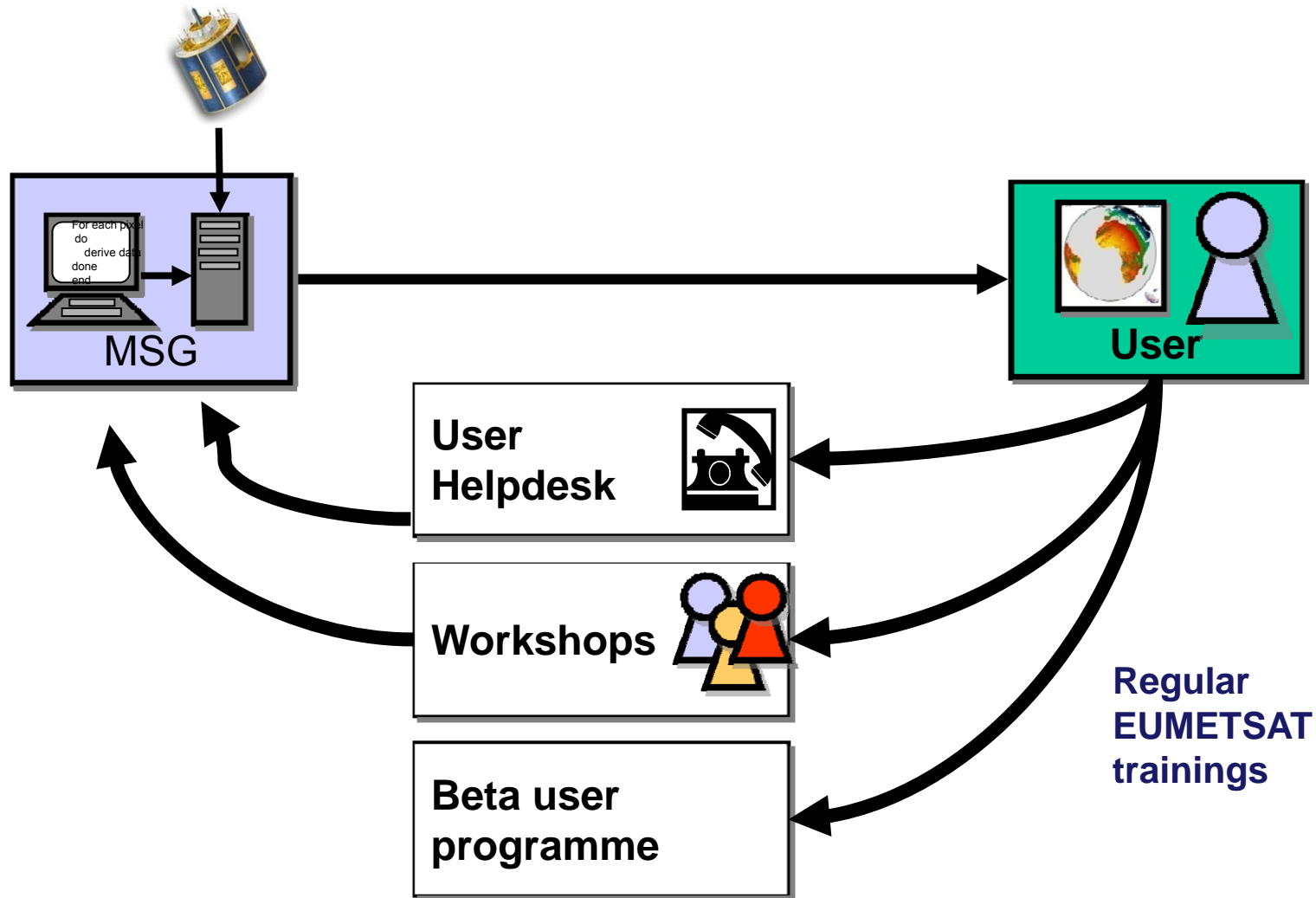
- Use of operational satellite products (MSG, SPOT VGT),
- Case studies over various geographical areas of Brazil.

>**Target Groups of SAGEO:**

- Policy makers,
- Public environmental national agencies,
- Scientific community,
- Latin American environmental networks – INPE, CAZALAC, CREAM,
- Education (universities) → **Training and formation of highly qualified human resources (MSc., Ph.Ds)**



# University engagements on Meteosat-9 in Brazil



SAGEO: Concept and Activities

SAGEO: Standard EUMETCast station

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SAGEO: Research and Education

University engagements on utilization of Meteosat-9 in Brazil

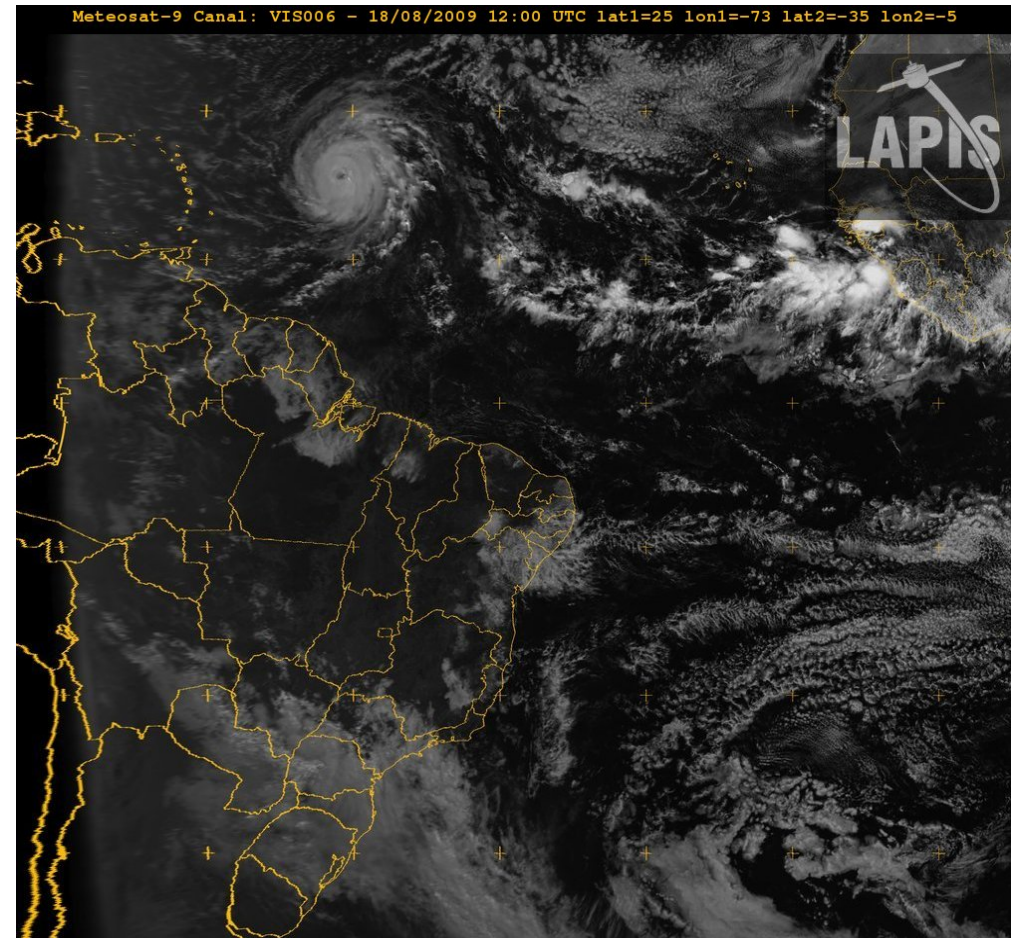
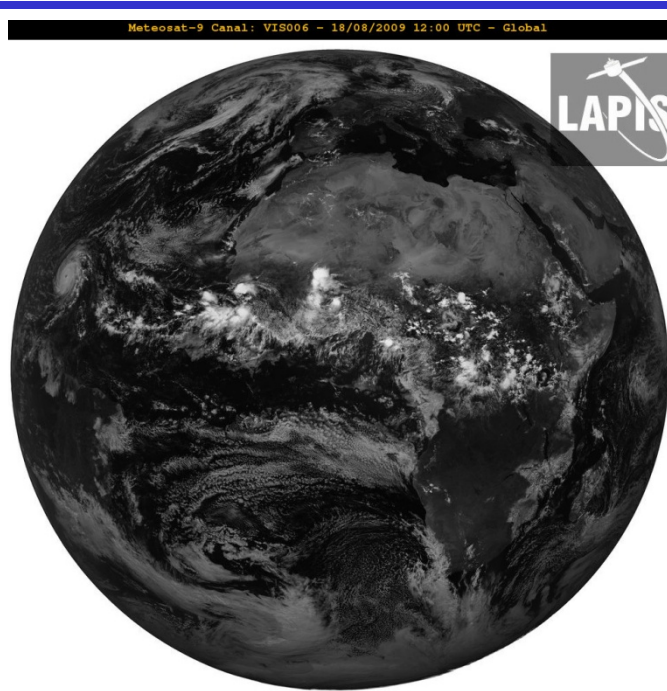
SAGEO: Training Opportunities

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# University engagements on Meteosat-9 in Brazil



**Objective: DEVELOPMENT OF DATABASES AND ANALYSIS TOOLS FOR DECISION-MAKING ON GOING ACTIVITIES BASED ON MSG DATA:**

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*SAGEO: Training and Capacity Building*

SAGEO: Research and Education

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**Training  
Experiences  
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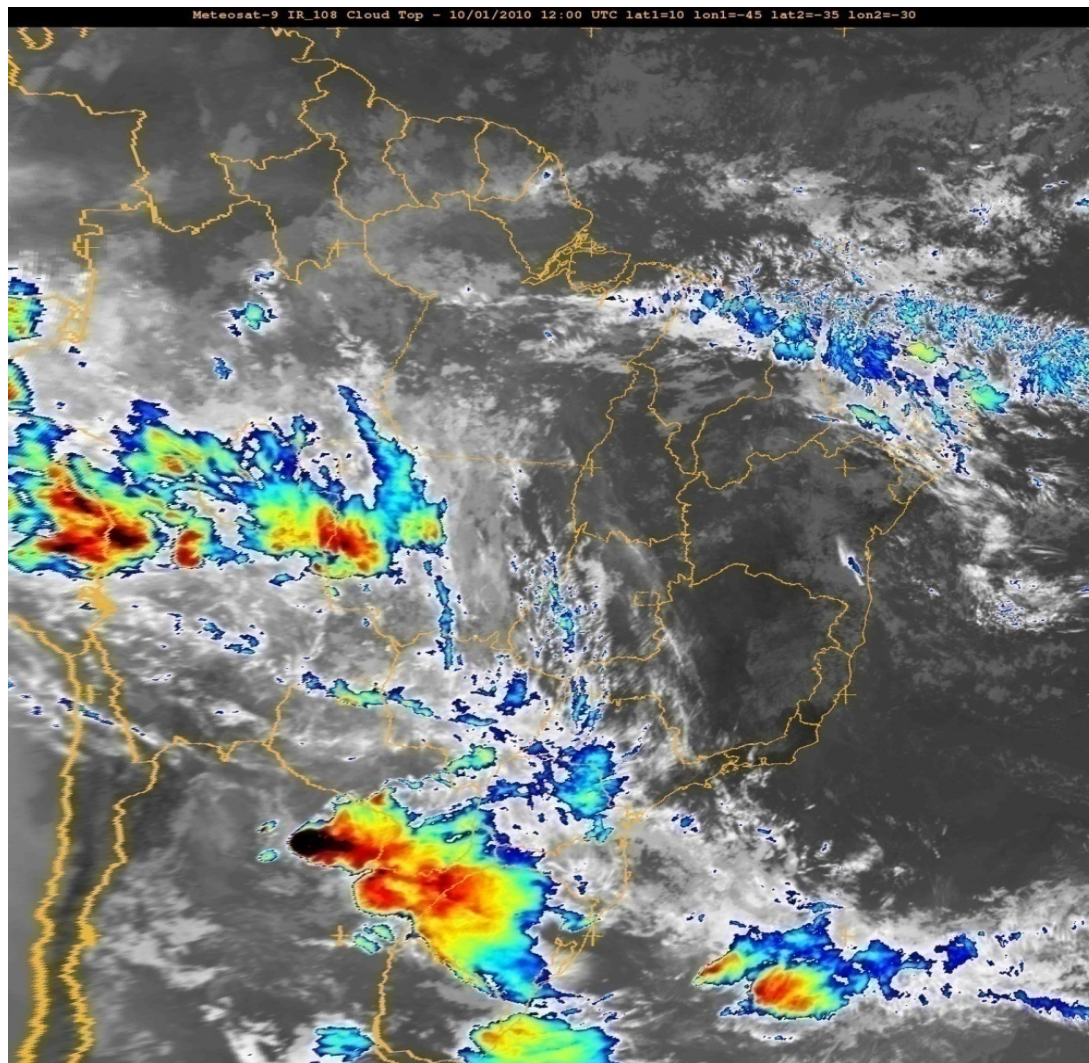
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# University engagements on Meteosat-9 in Brazil



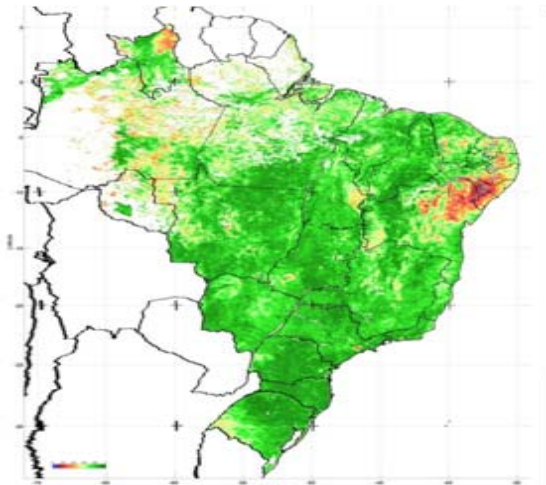
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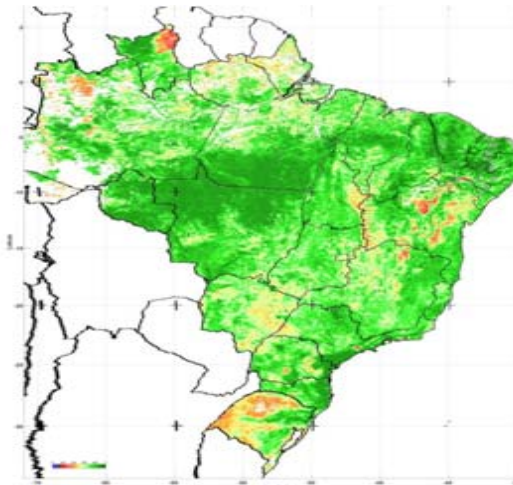




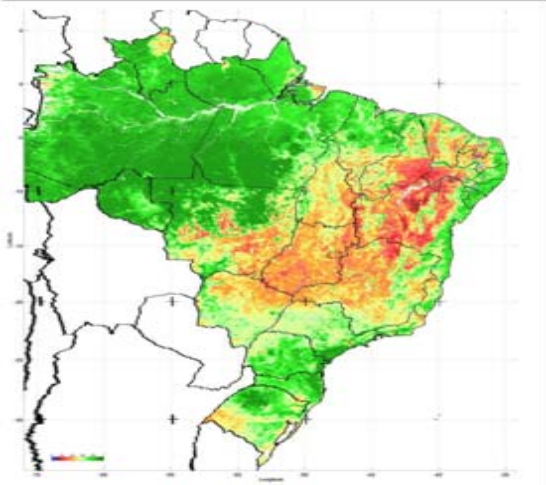
# University engagements on Meteosat-9 in Brazil



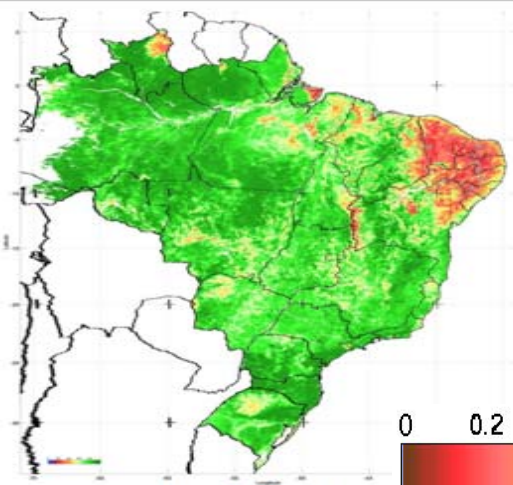
A) 01/03/2009



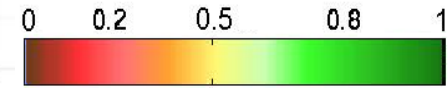
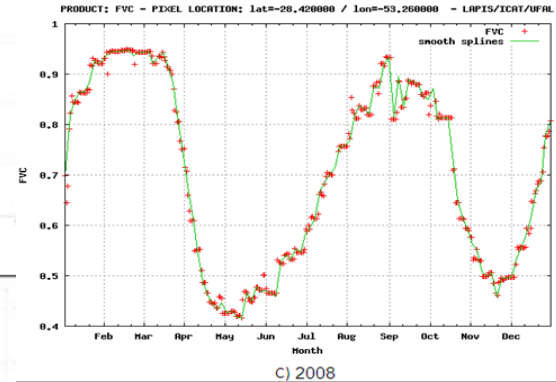
B) 01/06/2009



C) 01/09/2009



D) 01/12/2009



SAGEO: Concept and Activities

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SAGEO: Research and Education

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University Support and Dissemination

SAGEO: Training Opportunities

Conclusions



## **SAGEO: Training Opportunities**

Various training events in Brazil:

Cachoeira Paulista (2006)

Maceió (2007)

Cachoeira Paulista (2008)

João Pessoa (2009)

Belém (2010)

Curitiba (2011)

Maceió (2011)

Gramado(2012)

>Trainers from EU, Brazil, Chile and Argetina

>Strengthen the capacities of SAGEO in the processing and analysis of MSG and SPOT VGT.

Still to come: Strengthening regional capacities for providing remote sensing and hydrological modeling-based water and land management decision support in semi-arid Latin-America, in the context of climate variability & change, in Maceio (Brazil 2012)





## Conclusions

The joint initiative between the EUMETSAT and the LAPIS/UFAL. Three characteristics of the SAGEO appear to be contributing to its success, which are:

- (1) to bring together the EUMETCast network operators to identify areas for regional cooperation;**
- (2) to provide a technical and scientific exchange in environmental and atmospheric sciences between various Brazilian research institutes, while they broaden the knowledge about their applications;**
- 3) tools used are freeware and are at disposal of the group.**



# Conclusions

- . **SAGEO>>>NEEDS INTERACTION WITH CWG.**

How can SAGEO and CWG support the application of convection analyses in Brazil?



## The End



LABORATÓRIO DE ANÁLISE E PROCESSAMENTO DE IMAGENS DE SATÉLITES

Objetivos Projetos Contatos

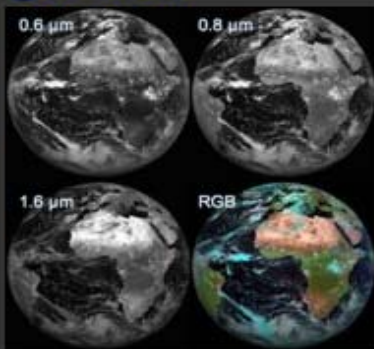
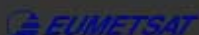
### Menu Principal

- Home
- Equipe
- Pesquisas
- Publicações
- Softwares
- Contatos

### Produtos

- Estação de Recepção

### Links



### Lapis



Qui, 24 de Setembro de 2009

## •Thank you for listening! •Questions?

O Laboratório de Análise e Processamento de Imagens de Satélites (LAPIS) da Universidade Federal de Alagoas (UFAL) realiza atividades de pesquisa, assistência tecnológica e treinamento de recursos humanos para a recepção, processamento, interpretação e integração de imagens dos satélites da série METEOSAT. Para atender a essa demanda, em 2007 a UFAL instalou e operacionalizou a terceira estação de recepção de imagens do satélite METEOSAT Segunda Geração (MSG) do Brasil. Como atividades de pesquisa e transferência de conhecimento, a equipe do LAPIS elabora aplicativos para tratamento de imagens, disponibiliza produtos meteorológicos e ambientais derivados do MSG para setores operacionais e oferece treinamento na área. Desenvolvidas inteiramente com ferramentas open-source e freeware.

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### Eventos

- 2006
- 2007
- 2008
- 2009

