

EPLANET TRIP REPORT AT  
UERJ  
(RIO DE JANEIRO, BRAZIL)



*SFT Group Meeting, April, 14, 2014*

- **UERJ:** Universidade do Estado do Rio de Janeiro
  - Large group involved in CMS (main professor is Alberro Santoro)
  - plus some other people involved in ATLAS (Marcia Begalli)
- UFRJ: Rio Federal State University
  - involved in both ATLAS and LHCb (Yara Do Amaral Coutinho)



# COURSE ON STATISTICAL DATA ANALYSIS

- Topics Covered:
  - Introduction to Statistics (Probability, parameter estimation)
  - Introduction to Machine Learning (Classification theory, methods)
  - Overview of ROOT (histogram, trees, I/O)
  - Fitting in ROOT and RooFit
  - Advanced statistics (confidence interval, hypothesis tests)
  - RooStats and HistFactory (model building)
  - Advanced Machine Learning: e.g. Deep Learning, etc..

# COURSE LAYOUT


- 3 hours of lectures every day
  - complemented with tutorial sessions
- Indico Agenda available: <https://indico.cern.ch/event/402660/>


## Advanced Methods in Data Analysis Course


16-27 November 2015  
UERJ - DFNAE  
America/Sao\_Paulo timezone



- Overview
- Scientific Programme
- Timetable
- Contribution List
- Author List
- My Conference**
  - My Sessions
  - My Contributions
- Registration
- Videoconference Rooms

The Advanced Methods in Data Analysis Course is a introductory level course composed of lectures and hands-on tuition.  
The course is targeted at undergraduate students and young graduate students. There is no registration fee. If you are interested to attend the course please register before 01th October 2015.

 **Starts** 16 Nov 2015 10:00  
**Ends** 27 Nov 2015 18:00  
America/Sao\_Paulo

 **UERJ - DFNAE**  
10  
R. São Francisco Xavier, 524 - Maracanã, Rio de Janeiro - RJ  
Brazil

 **Revoredo, Eduardo**  
Dr. Gleyzer, Sergei  
Moneta, Lorenzo

 **Materials** 

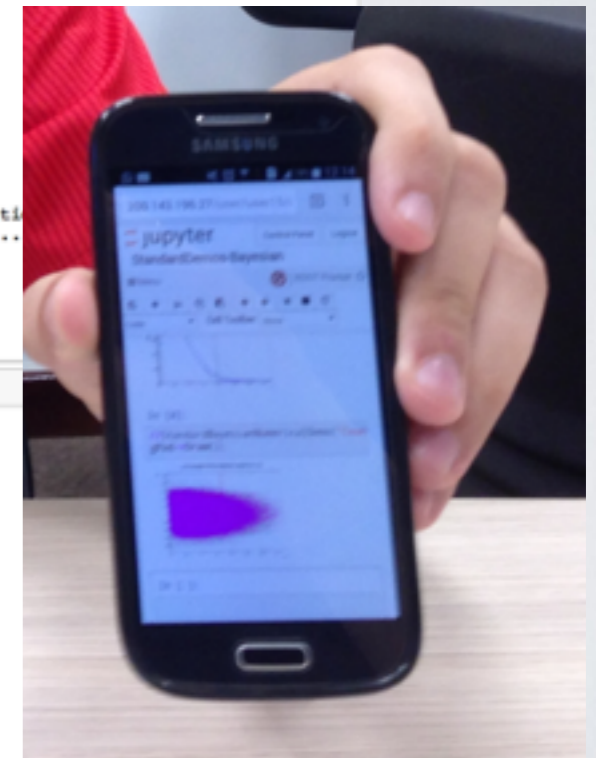
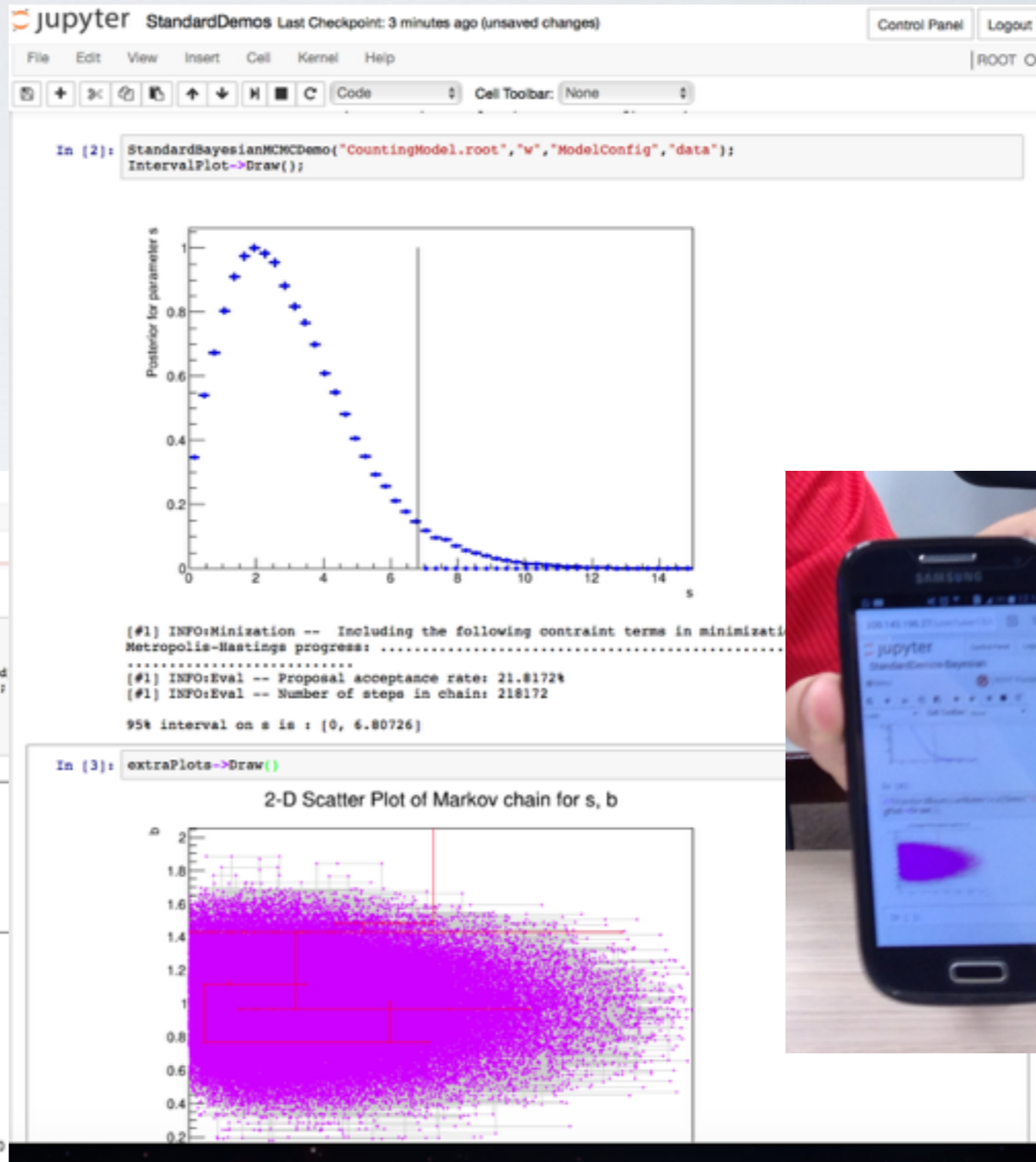
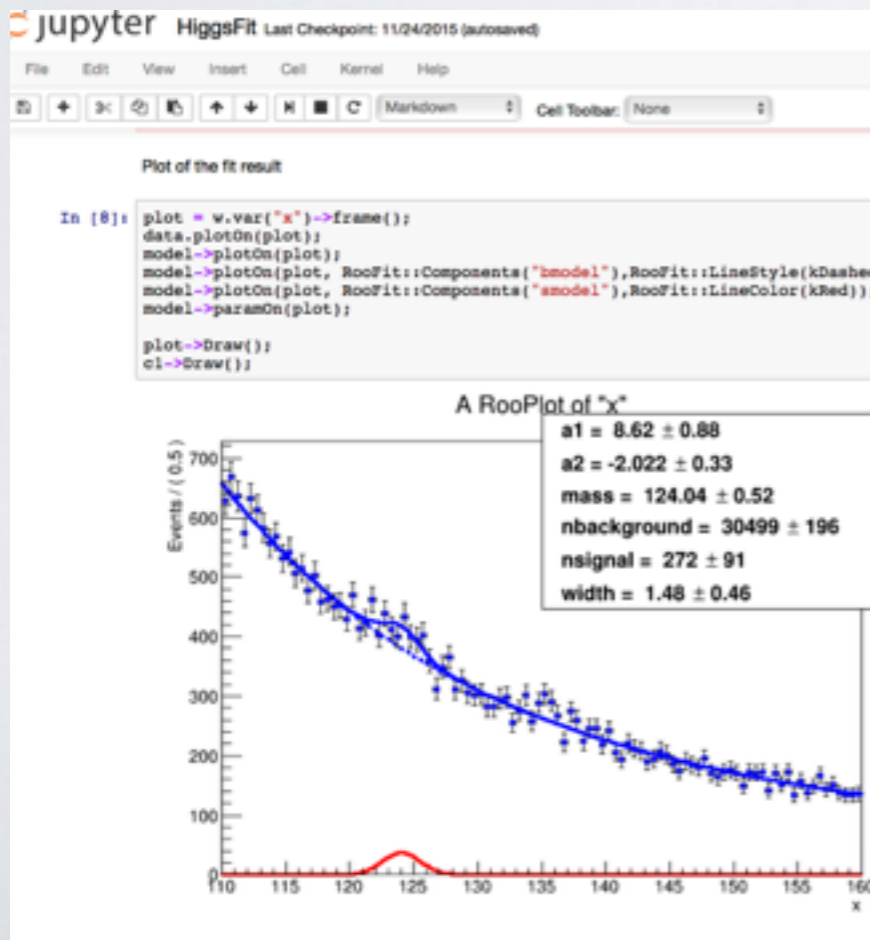
There are no materials yet.

# TUTORIALS

- Use a Twiki page to describe exercises
  - <https://twiki.cern.ch/twiki/bin/view/Main/ROOTRioTutorial>
  - run ROOT on their personal laptops
  - we have prepared also a CERNVM machine with ROOT installed (thanks to Jakob)
- Use of ROOT Notebook (ROOTBooks)
  - fantastic tool for teaching software
  - installed on the University server
  - some people could run the tutorials on the Mobile devices

# ROOT NOTEBOOKS

- Use Notebooks for fitting, ML and RooStats tutorials



# FEEDBACK FROM THE COURSE

- Very positive feedback received
- People very interested in the courses
  - total of 29 people ( ~ 20 in average)
  - master, ph-D students, staff researches and professors (10 of them and 4 professor in average)
- Many questions received, very active participation
  - Many follow-up questions asked both about ROOT and data analysis and machine learning



# CONCLUSIONS

- Course was very well received and found very useful
  - grateful for EPlanet program to support this
- Established very good contacts with people at UERJ
  - Asked for having again a similar course possibly in Manaus
  - Started discussing a machine learning project in collaboration with UERJ (and possibly other Latin America universities)



