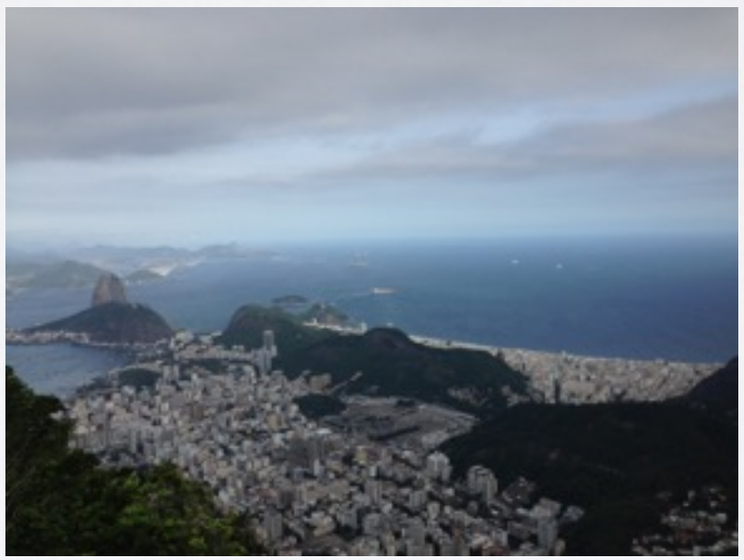
EPLANET TRIP REPORT AT UERJ

(RIO DE JANEIRO, BRAZIL)



SFT Group Meeting, April, 14, 2014

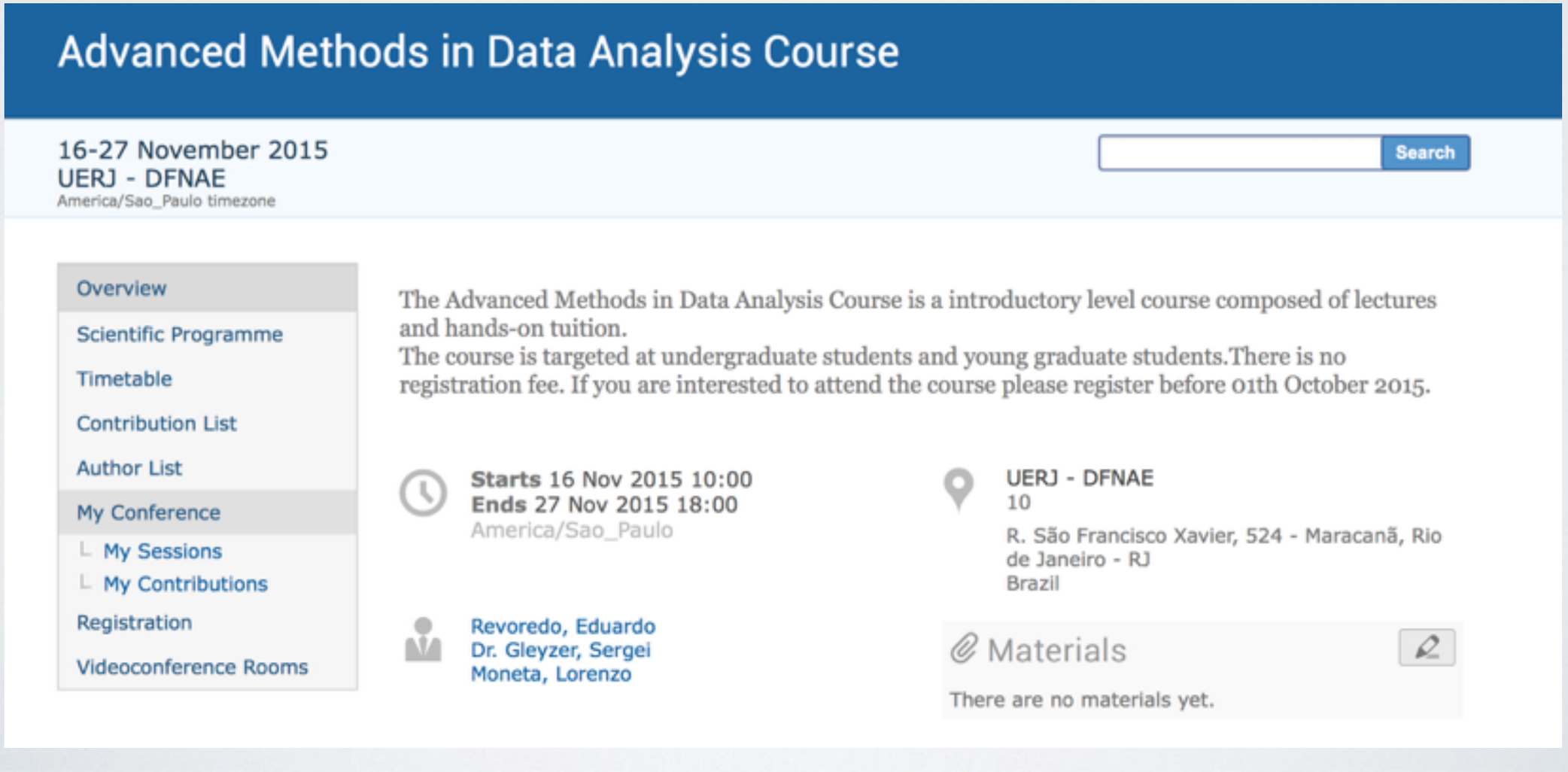
- UERJ: Universidade do Estado do Rio de Janeiro
  - Large group involved in CMS (main professor is Albero Santoro)
  - plus some other people involved in ATLAS (Marcia Begalli)
- UFRJ: Rio Federal State University
  - involved in both ATLAS and LHCb (Yara Do Amaral Coutinho)

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/

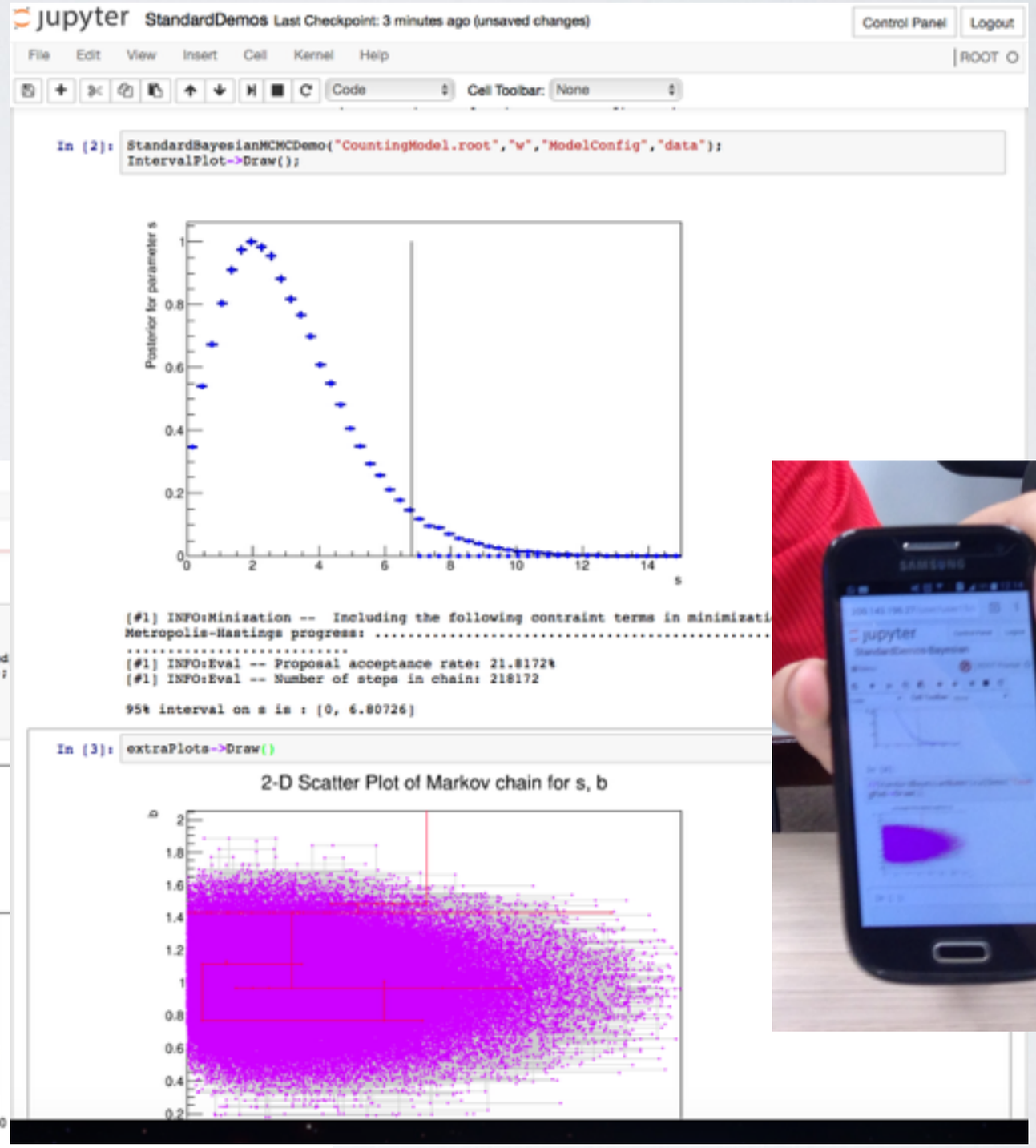


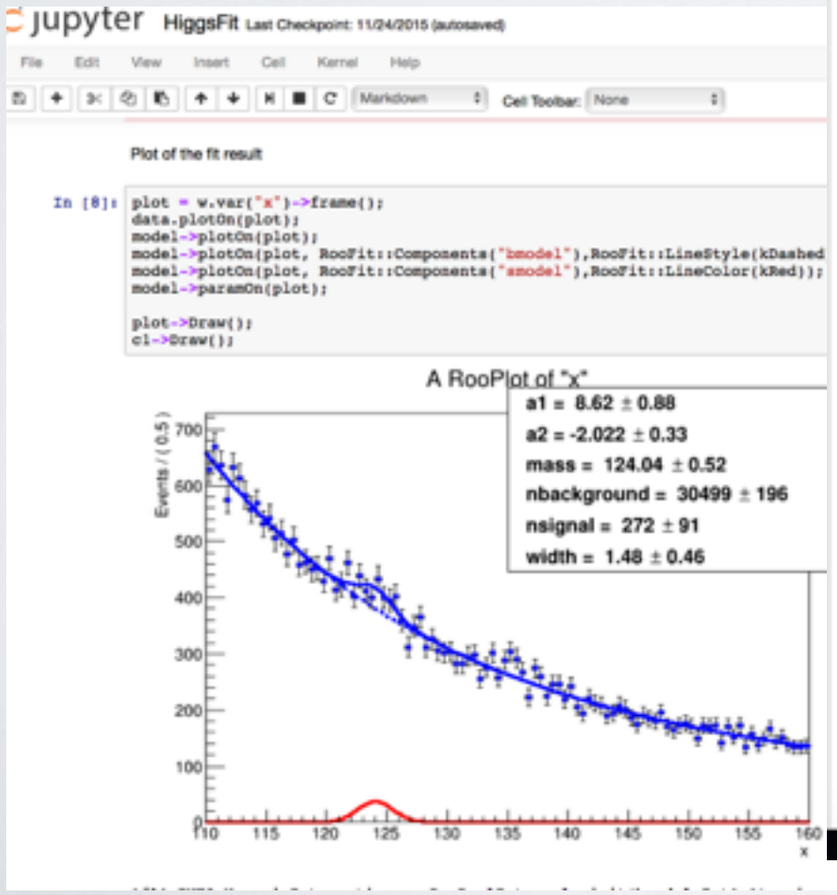
TUTORIALS

- 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)


UERJ