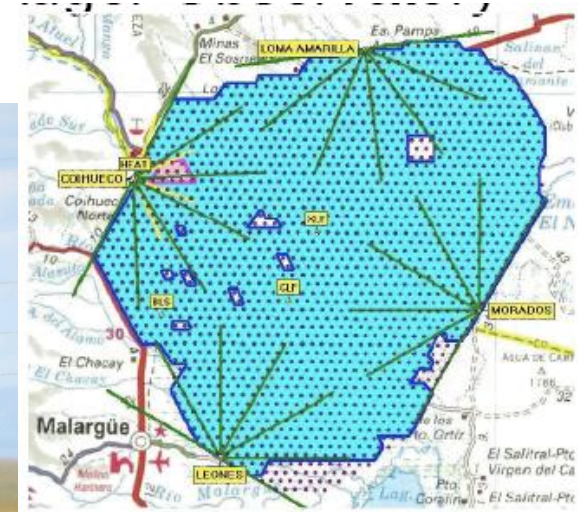


PIERRE
AUGER
OBSERVATORY

Pierre Auger Observatory

Perspectives



Area ~ 3000 km²

27 telescopes

1600 tanks



TÉCNICO
LISBOA

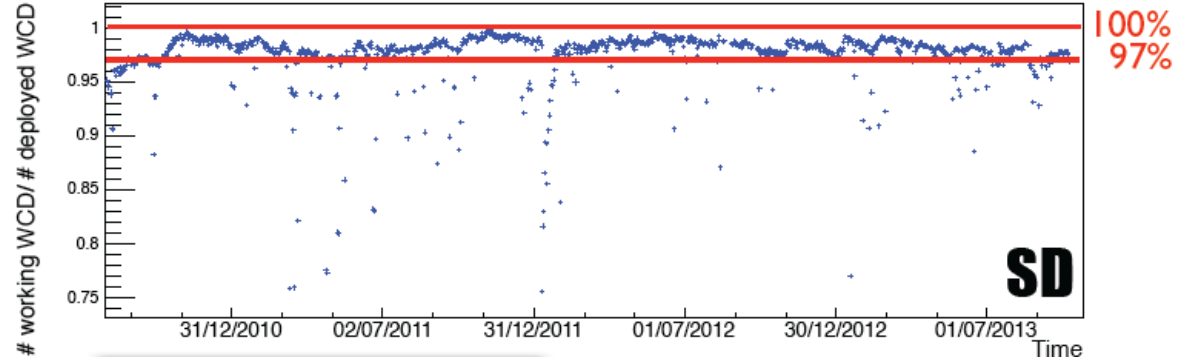
Mário Pimenta
Lisboa, March 2014

Where we stand

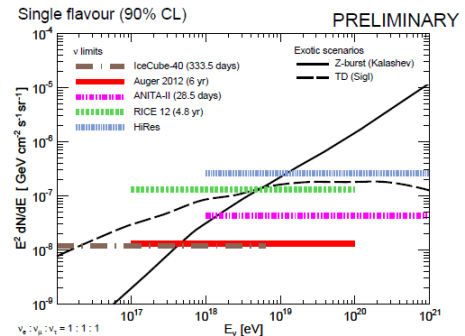
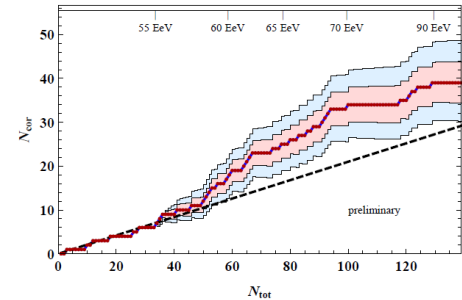
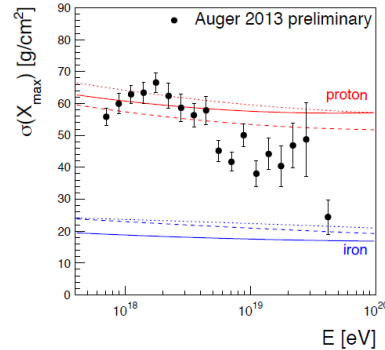
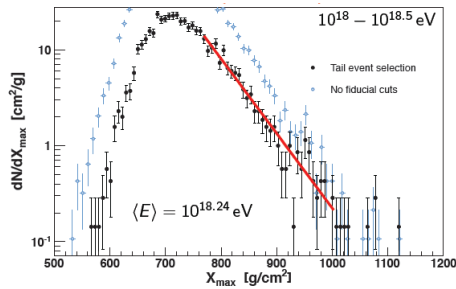
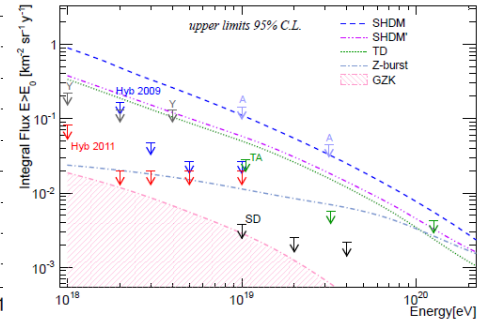
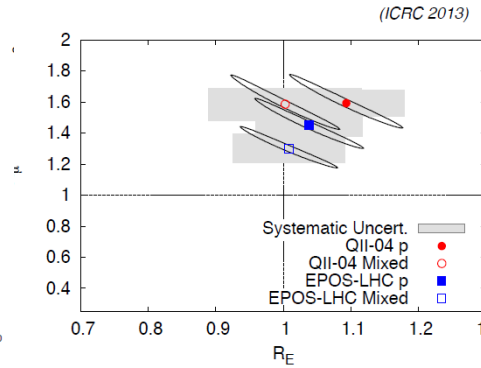
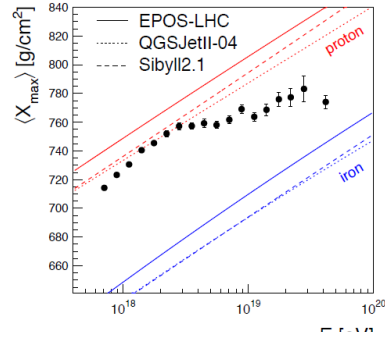
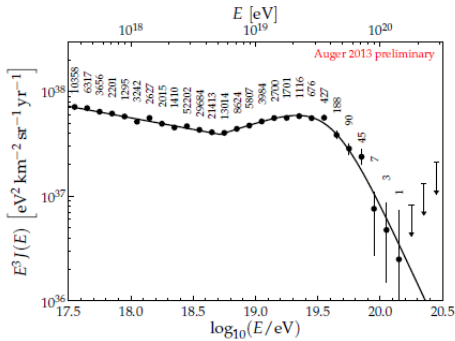
The Swiss clock!



Fraction of Water Cherenkov Tanks in operation



Sounded Results !

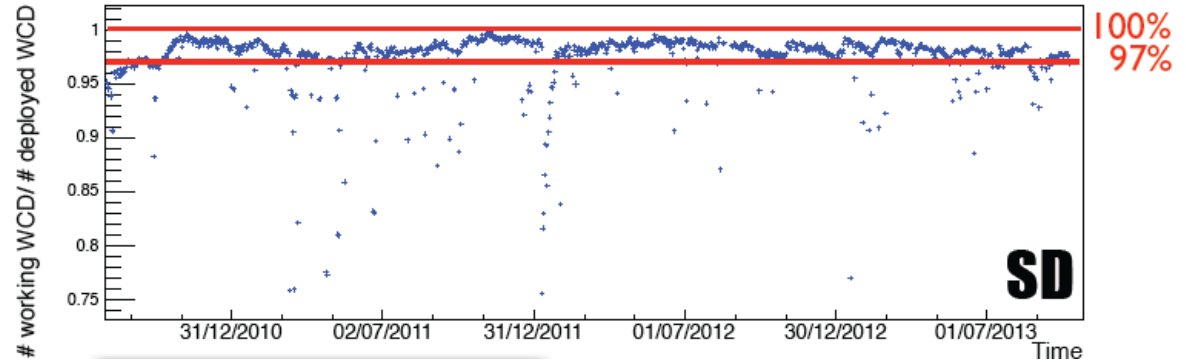


Where we stand

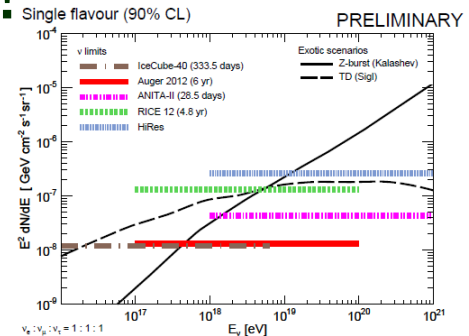
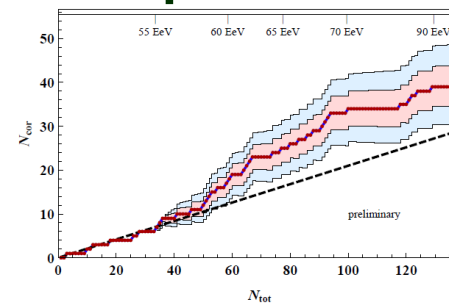
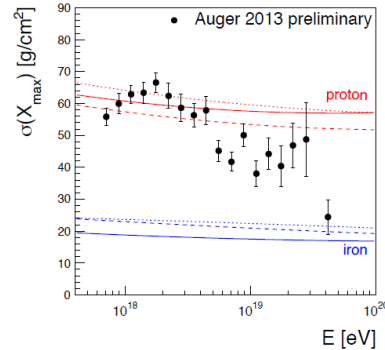
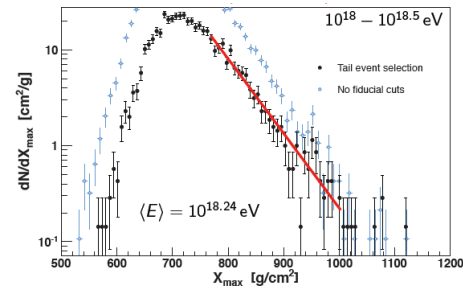
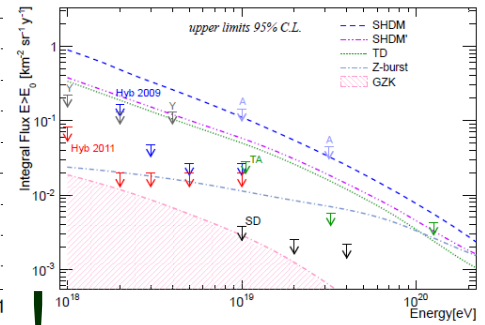
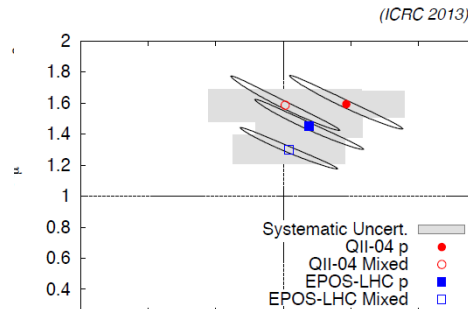
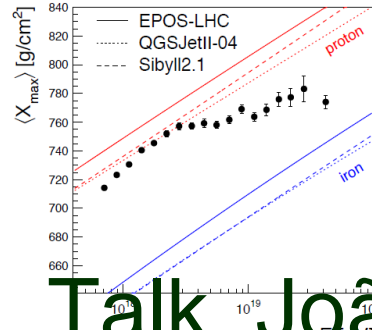
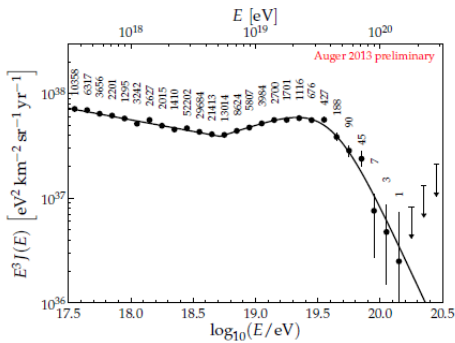
The Swiss clock!



Fraction of Water Cherenkov Tanks in operation



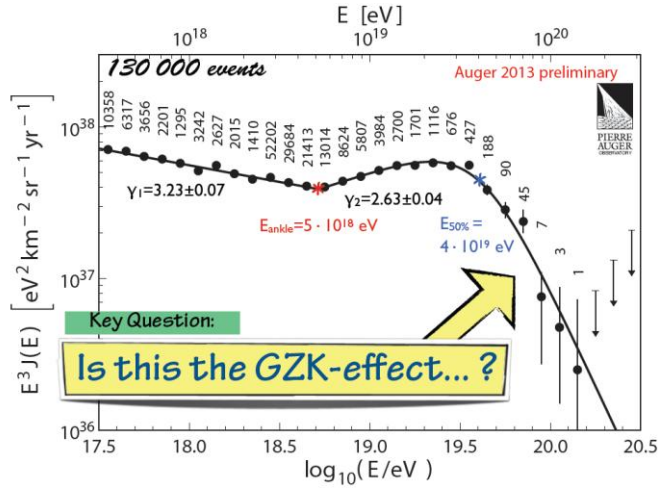
Sounded Results !



Talk João Espadanal !

Where we want to go

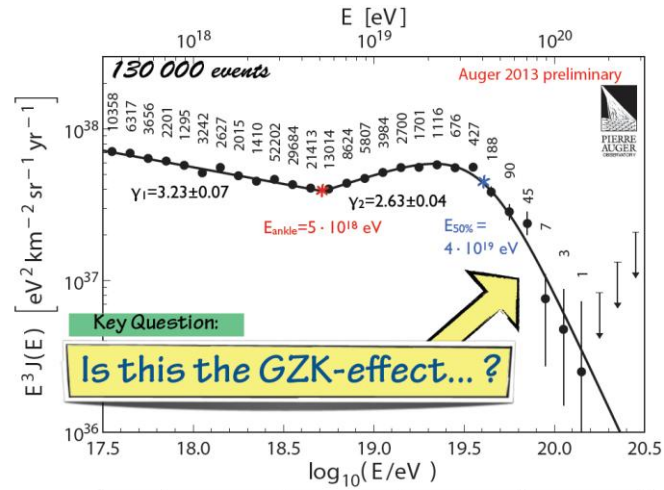
Resolve the question of the origin of the flux suppression (GZK or the exhaustion of sources?)



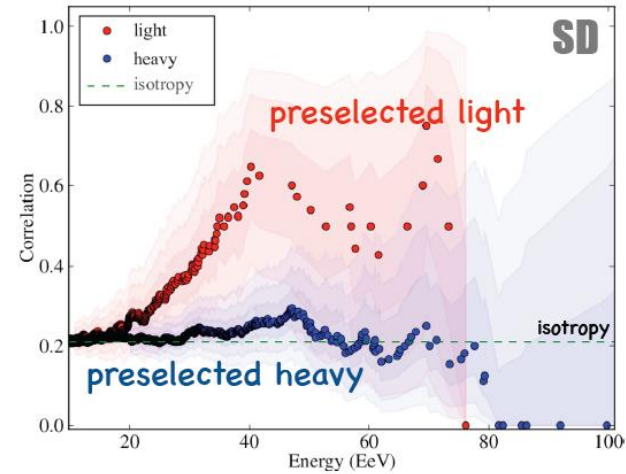
Where we want to go

Resolve the question of the origin of the flux suppression (GZK or the exhaustion of sources?)

Search for a flux of protons at the highest energies opening a particle astronomy window



Energy cutoff



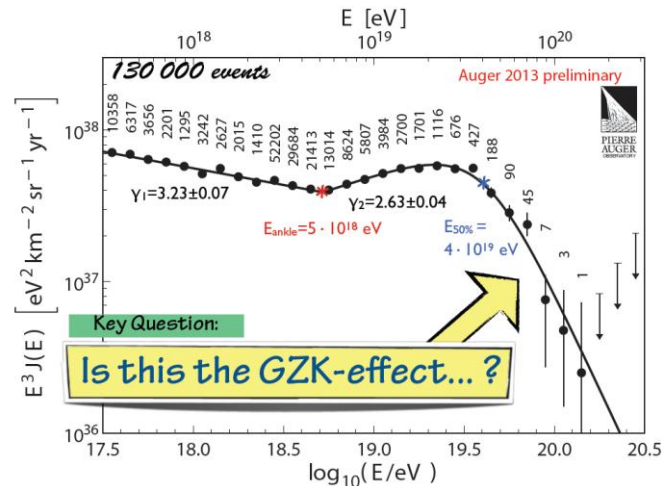
AGN correlation

Where we want to go

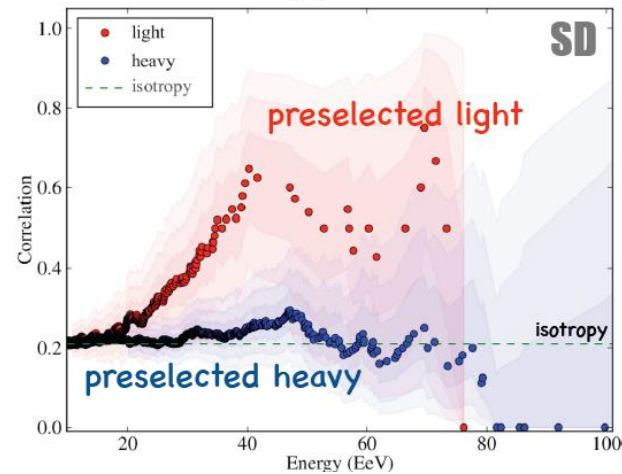
Resolve the question of the origin of the flux suppression (GZK or the exhaustion of sources?)

Search for a flux of protons at the highest energies opening a particle astronomy window

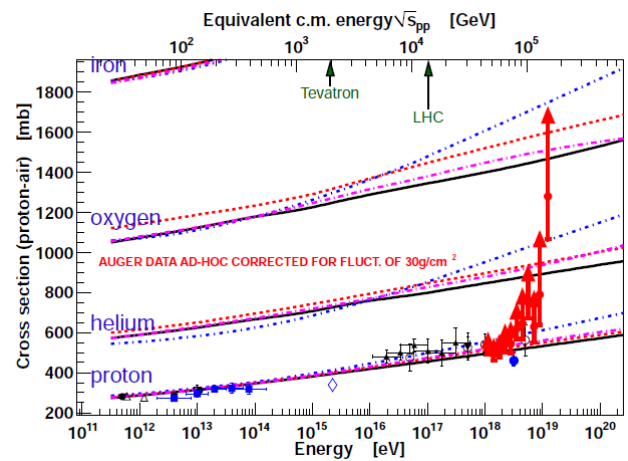
Study Hadronic Physics at the 100 TeV scale



Energy cutoff



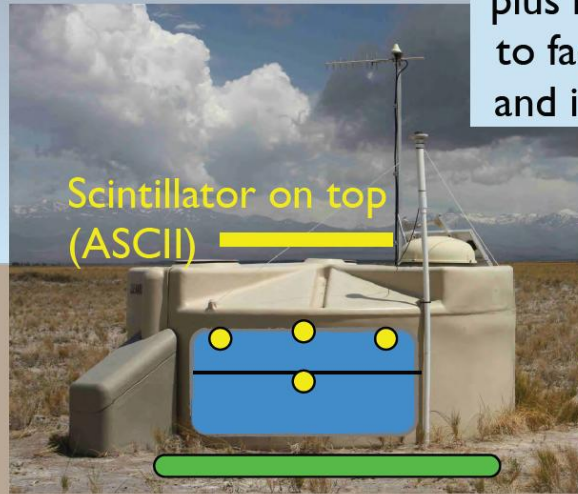
AGN correlation



Cross-section

It is the muons ...!!!

Different Upgrade Options under Study

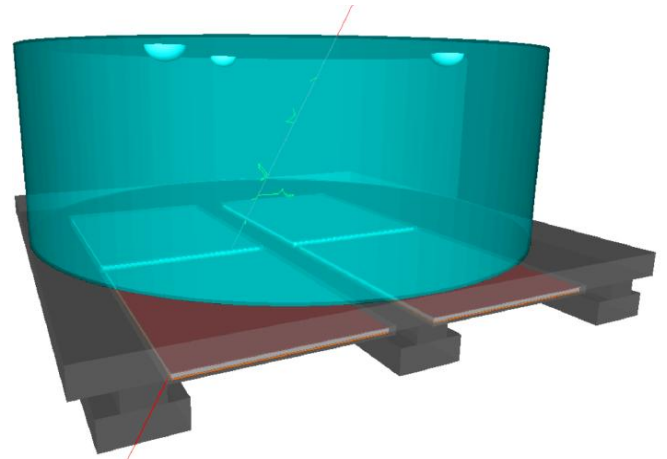


plus new electronics to facilitate readout and improve WCDs

segmented tank (LSD)

RPCs below (Marta)

Scintillators in ground (AMIGA-Grande, TOSCA)



Talks: Raul Sarmento

Paulo Fonte/Luís Lopes

Politics (money)...

The Auger international agreement must be renewed at the end of 2015

The FB appointed an external Scientific Advisory Committee

Roberto Battiston (INFN)

Christophe De La Taille (IN2P3)

Felix Mirabel (CEA)

Tom Gaisser (University of Delaware)

Francis Halzen (University of Wisconsin-Madison, chair)

Henry Sobel (University of California-Irvine)

Christian Spiering (DESY-Zeuthen)

First report after the visit to Malargue

- Auger is the worlds best experiment for addressing the question about the Nature of the most energetic particles in the Universe
- Collaboration is to be congratulated for all their achievements
- . . .
- Don't go for 2-3 sigma effects!
- Relax timescale of TDR by a few months, if needed
- A bold case with its expected large scientific return will justify even higher upgrade costs
- Don't compromise: concentrate on science first and costs second



We are exploring the 100 TeV energy scale, well beyond LHC, and may be we are touching something fundamental! 9

