



Astrophysics and Astroparticles: Galaxy Spectra, Anisotropies, and Neutral Messengers

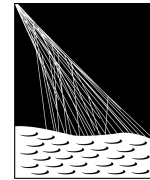


Dr. Danelise de Oliveira Franco



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG



PIERRE
AUGER
OBSERVATORY

FEDERAL UNIVERSITY OF SANTA CATARINA (UFSC)

BACHELOR'S DEGREE



FLORIANÓPOLIS - BRAZIL

Undergraduate research project

Prof. Dr. Roberto Cid Fernandes Jr

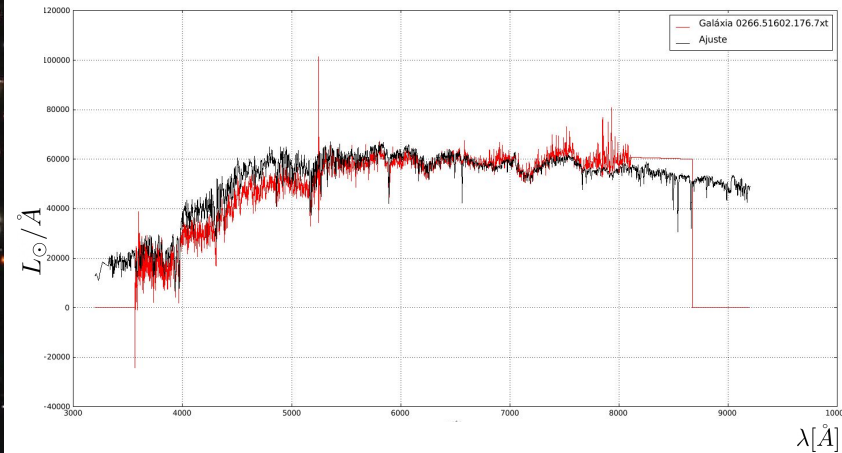
Extragalactic astrophysics

3 years working

Galaxy spectra

STARLIGHT code¹

Effects of dust on the light
propagation



STATE UNIVERSITY OF CAMPINAS (UNICAMP)

MASTER'S DEGREE



CAMPINAS - BRAZIL



Pierre Auger Observatory

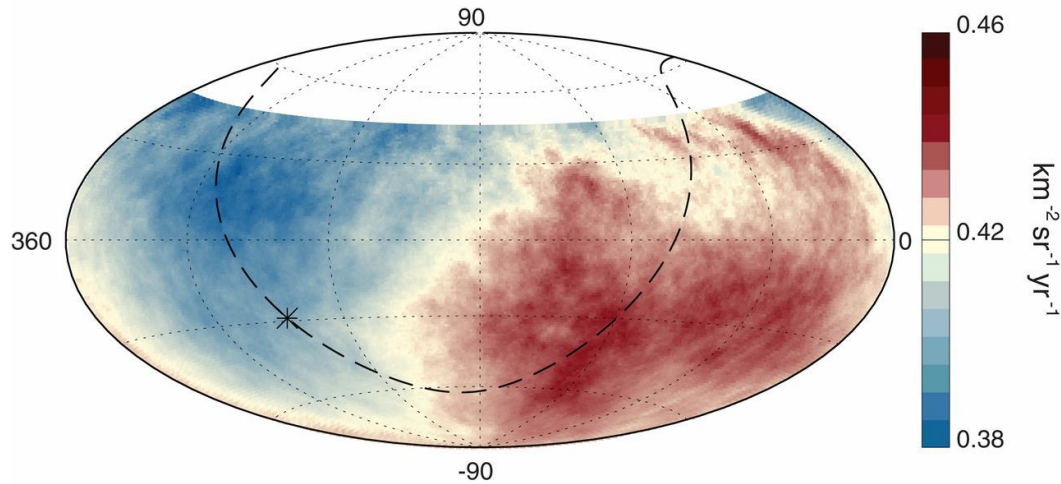
📍 Malargüe, Argentina

🏠 Hybrid design

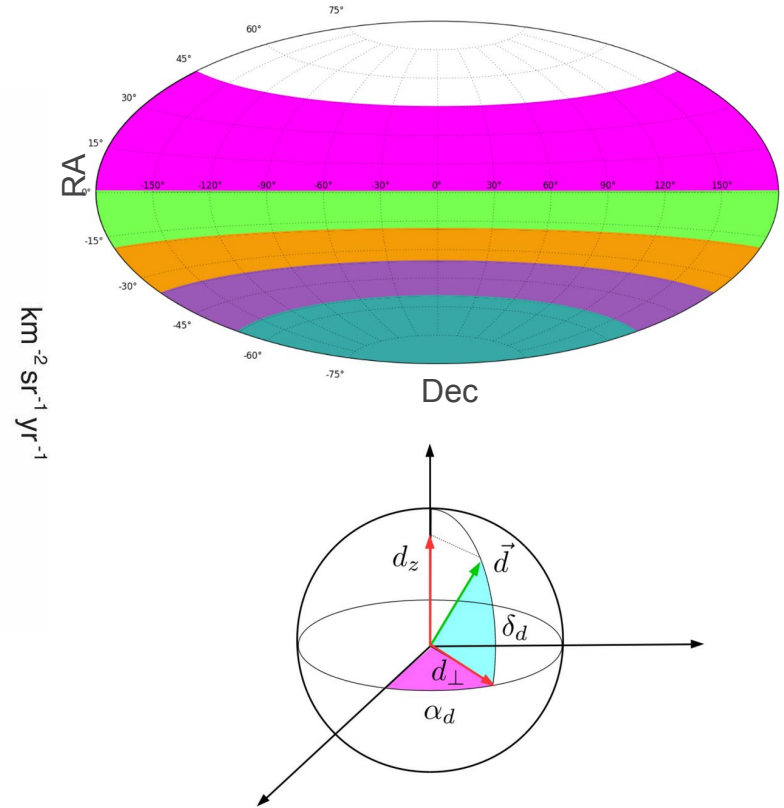
The Observatory has two main detector arrays: the Surface Detector (SD) and the Fluorescence Detector (FD)

STUDY OF THE DIPOLAR ANISOTROPY OF COSMIC RAYS DETECTED AT THE PIERRE AUGER OBSERVATORY AND ITS DEPENDENCE ON THE DECLINATION

Prof. Dr. Carola Dobrigkeit Chinellato



doi: 10.1126/science.aan4338



A scenic view of the State University of Campinas (UNICAMP) campus. In the foreground, a calm lake reflects the surrounding greenery and buildings. The middle ground is filled with lush trees and a modern university building with a glass facade. In the background, a dense urban area with tall apartment buildings and industrial smokestacks is visible under a clear blue sky.

STATE UNIVERSITY OF CAMPINAS (UNICAMP)

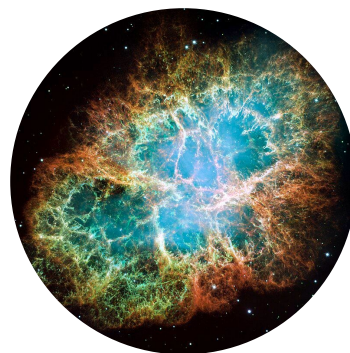
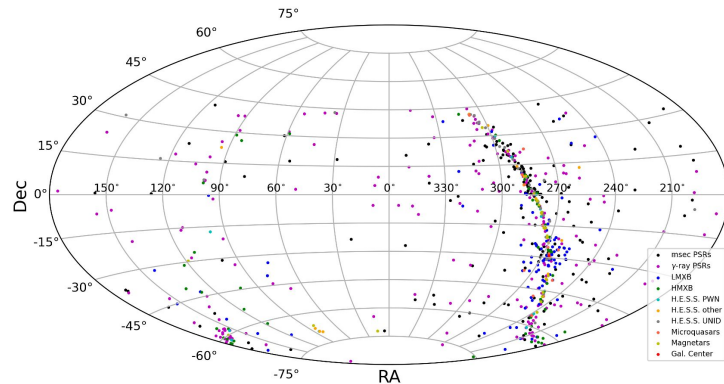
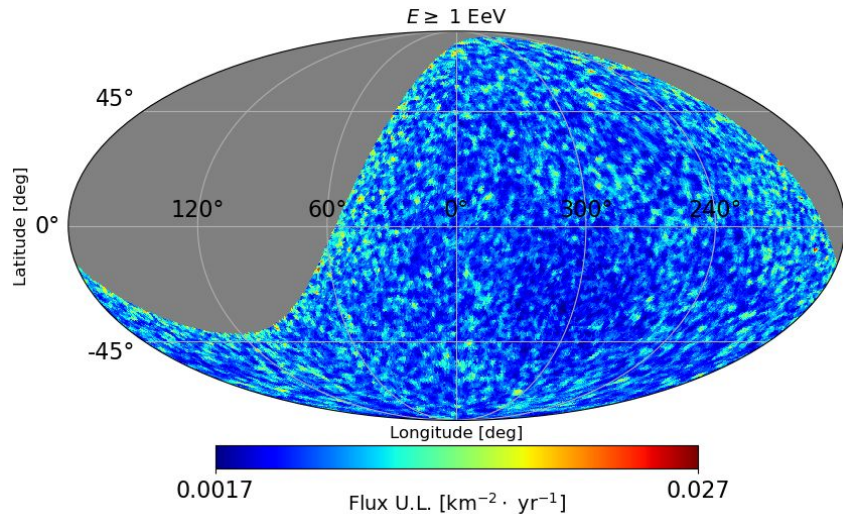
PHD IN PHYSICS

CAMPINAS - BRAZIL

Search for evidence of point sources of neutrons in the data of the Pierre Auger Observatory

Blind search¹
Targeted search²

Prof. Dr. Carola Dobrigkeit Chinellato



¹doi:10.1088/0004-637X/760/2/148

²doi:10.1088/2041-8205/789/2/L34

UNIVERSITY OF MILAN (UNIMI)

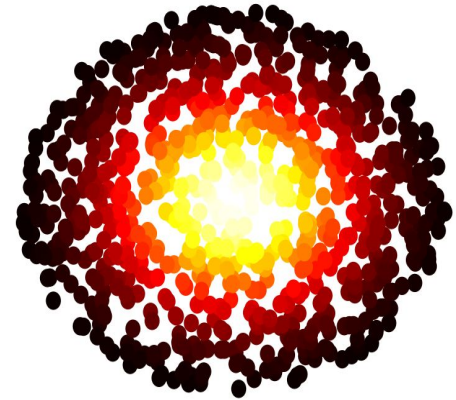
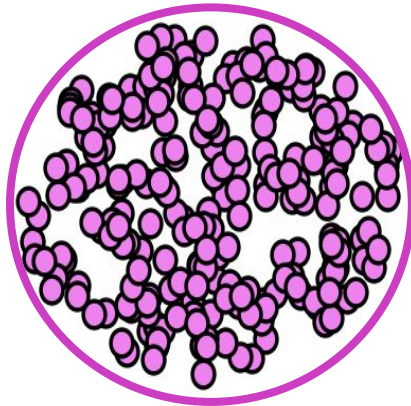
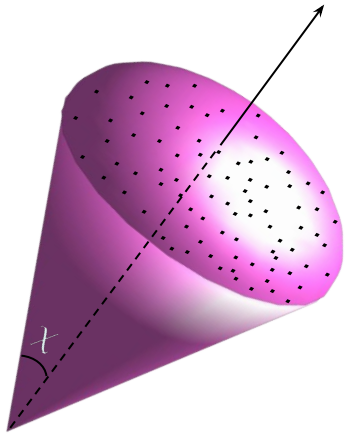


MILAN - ITALY

New method for the neutron analysis: Assigning a probability density for each event

Dr. Lorenzo Caccianiga

$$w_i = \frac{1}{2\pi\sigma_i^2} \cdot \exp\left(-\frac{\xi_i^2}{2\sigma_i^2}\right)$$





Awarded as the **best PhD thesis**
of the **Gleb Wataghin Institute of**
Physics defended in **2023**



Honorable mention in the
CAPES Thesis Award 2024

ISTITUTO NAZIONALE DI FISICA NUCLEARE
(INFN - SEZIONE DI LECCE)

POSTDOCTORAL RESEARCHER

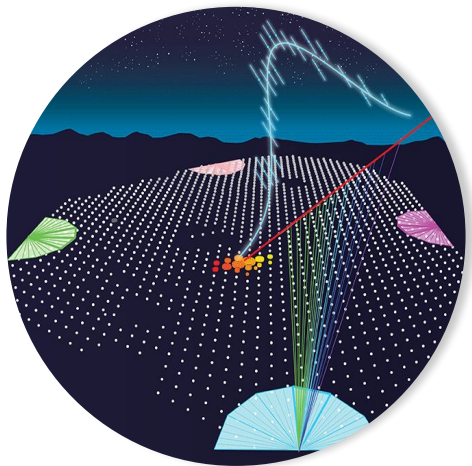
LECCE - ITALY

UNIVERSITY OF HAMBURG

RESEARCH ASSISTANT



HAMBURG - GERMANY



Prof. Dr. Günter Sigl's group



Pierre Auger Collaboration

Experimental



Theoretical



Thank you!

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