



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



Science and
Technology
Facilities Council



iThemba
LABS
Laboratory for Accelerator
Based Sciences

Pierre Auger Observatory International Masterclass

Prof. Dr. Nadir Hashim
Dr. Philippos Papadakis
Prof. Dr. Richard Newman
Ms. Veronicah Kihagi

Advanced Nuclear Science and Technology Techniques Workshop
18 – 22 May 2026, iThemba LABS, Cape Town, South Africa



Hands-on cosmic ray physics

PIERRE AUGER MASTERCLASSES

HOME

IMC 2026

MEASUREMENT

ACTIVITIES

DOWNLOADS

FAQ'S

Welcome to the

PIERRE
AUGER
OBSERVATORY

Masterclasses

<https://augermasterclasses.lip.pt/>



Preparations

Go to

<https://augermasterclasses.lip.pt/downloads>

- Get the suitable software
- Get the necessary documentation
- Read and follow the instructions

SOFTWARE



↓ WINDOWS
WINDOWS 7, 10, 11



↓ LINUX
UBUNTU 18.04+, CENTOS 7



↓ MAC
MACOS 10.13+

DOCUMENTATION

FOR THE PARTICIPATING INSTITUTIONS:

General instructions to participating institutions



Checklist for participating institutions



Slides introduction to the measurement



Slides tutorial for the analysis



FOR THE STUDENTS:

Student activity guide - English





Preparations

Go to

<https://augermasterclasses.lip.pt/downloads>

- Get the data set assigned
- Install the software
- Carry out the analyses
- Upload your results as instructed

PERMANENT DATASET PACKAGES



PACKAGE 30
.ZIP

DOWNLOAD SINGLE DATASETS



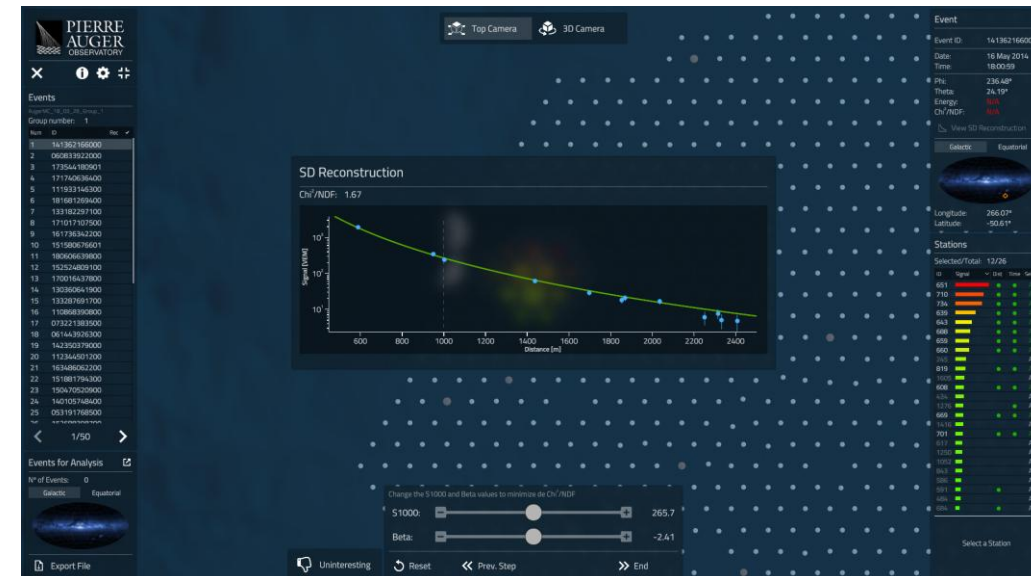
PACKAGE 60
.ZIP

DOWNLOAD SINGLE DATASETS



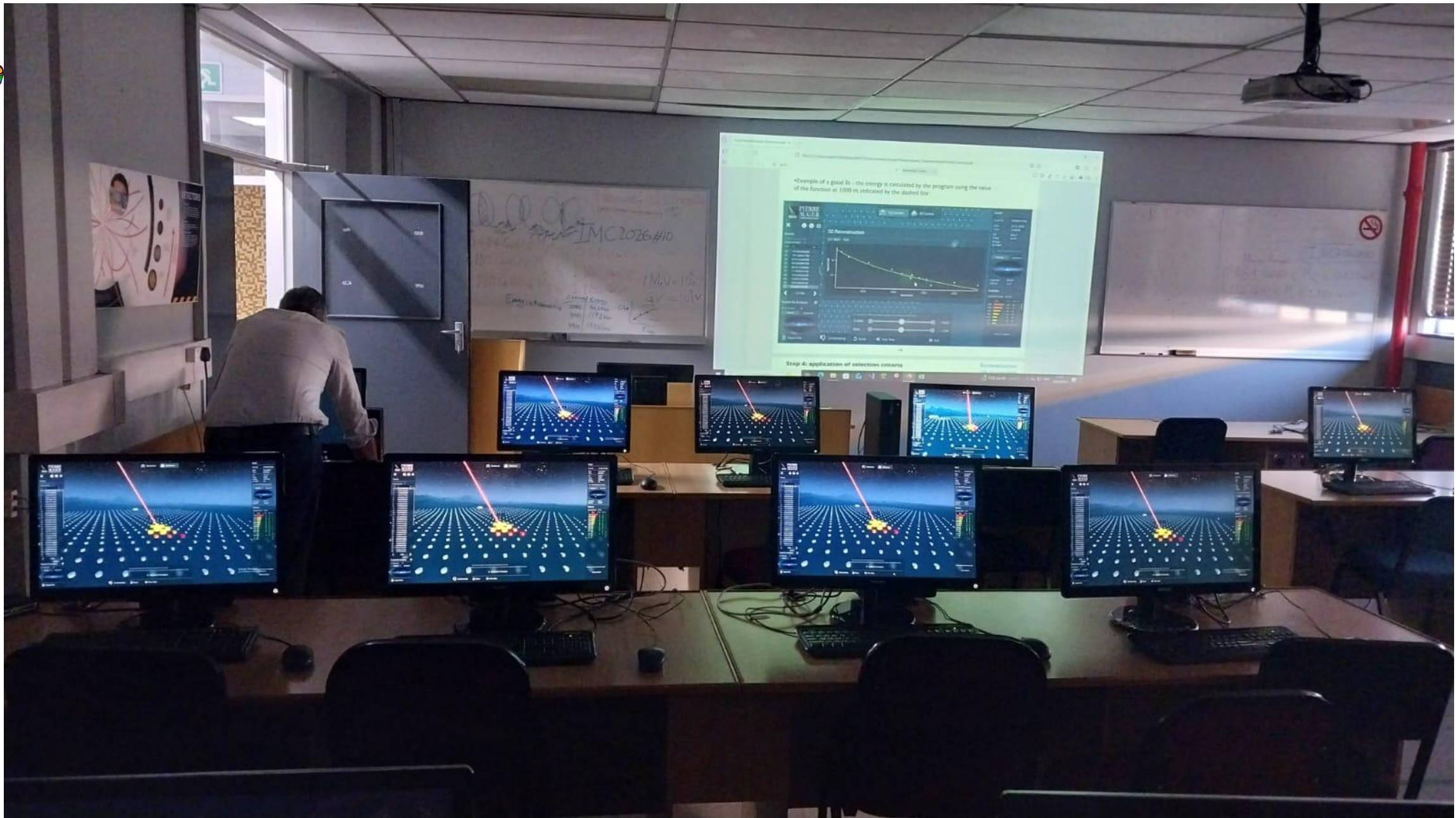
PACKAGE 90
.ZIP

DOWNLOAD SINGLE DATASETS





Preparation of the laboratory





Hands-on session / Data analysis



ANSTT 6, 18 – 22 May 2026, iThemba LABS, Cape Town, South Africa



ANSTT 6, 18 – 22 May 2026, iThemba LABS, Cape Town, South Africa



ANSTT 6, 18 – 22 May 2026, iThemba LABS, Cape Town, South Africa



Results



ANSTT 6, Cape Town, South Africa

DATASETS ANSTT 6, CAPE TOWN, SOUTH AFRICA

21

groups have uploaded their results

Updated on: 21/05/2026 14:27 (15 days ago) | Number of events: 444

View Group:

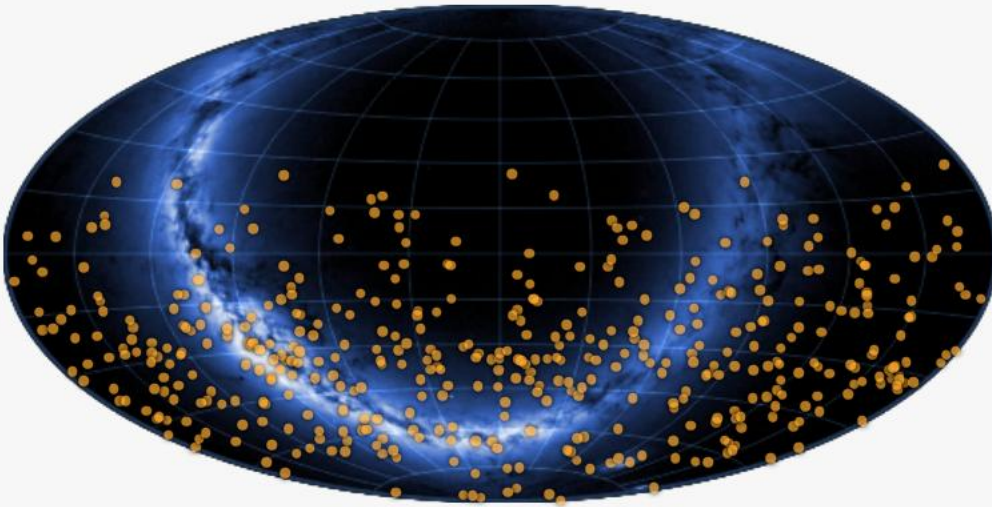


Count Map

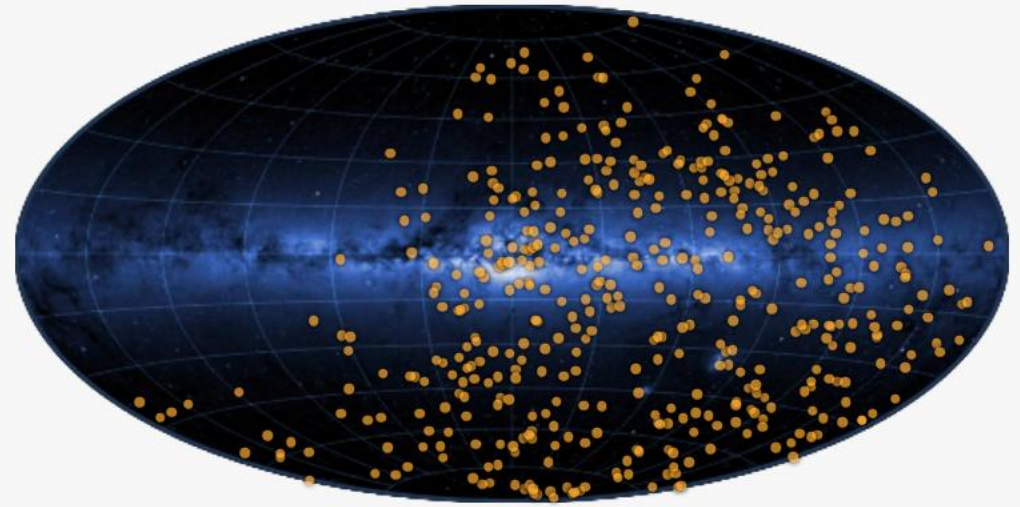
POINTS

PIXELS

Equatorial

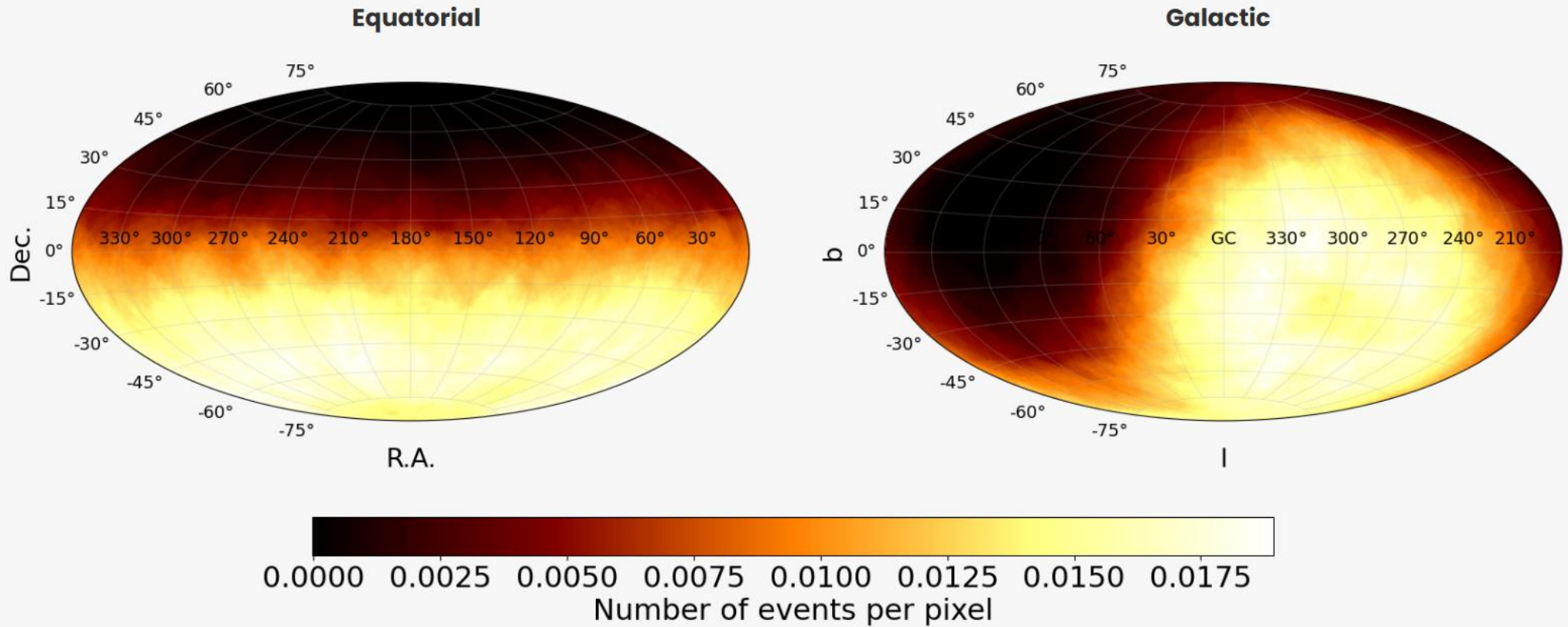


Galactic



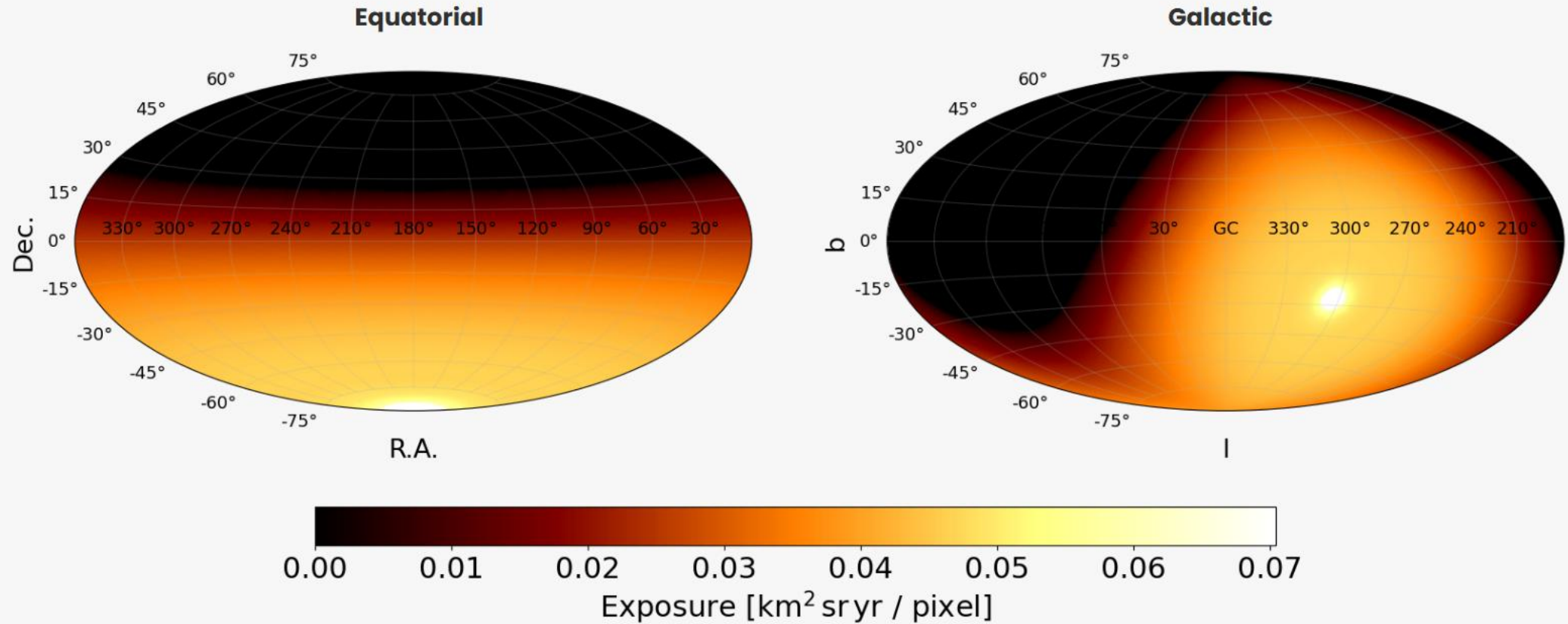


Smoothed Count Map, R=45°



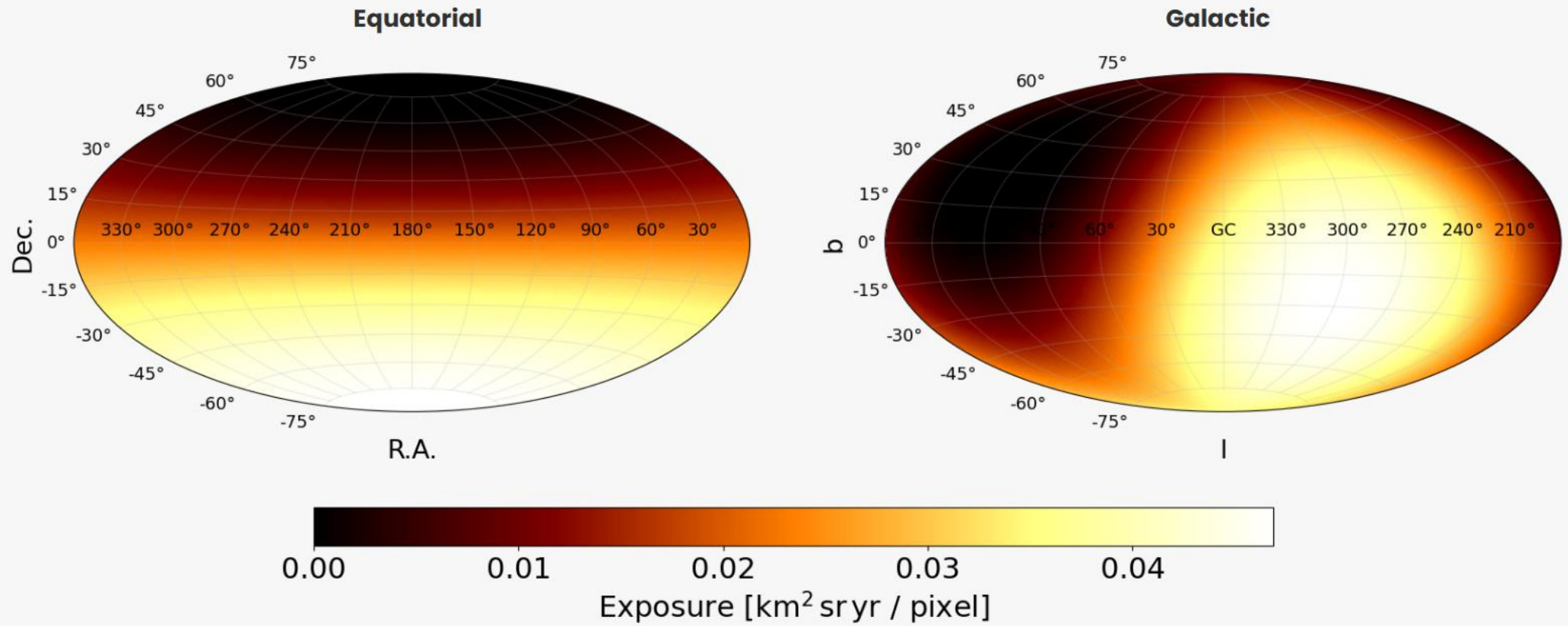


Exposure map



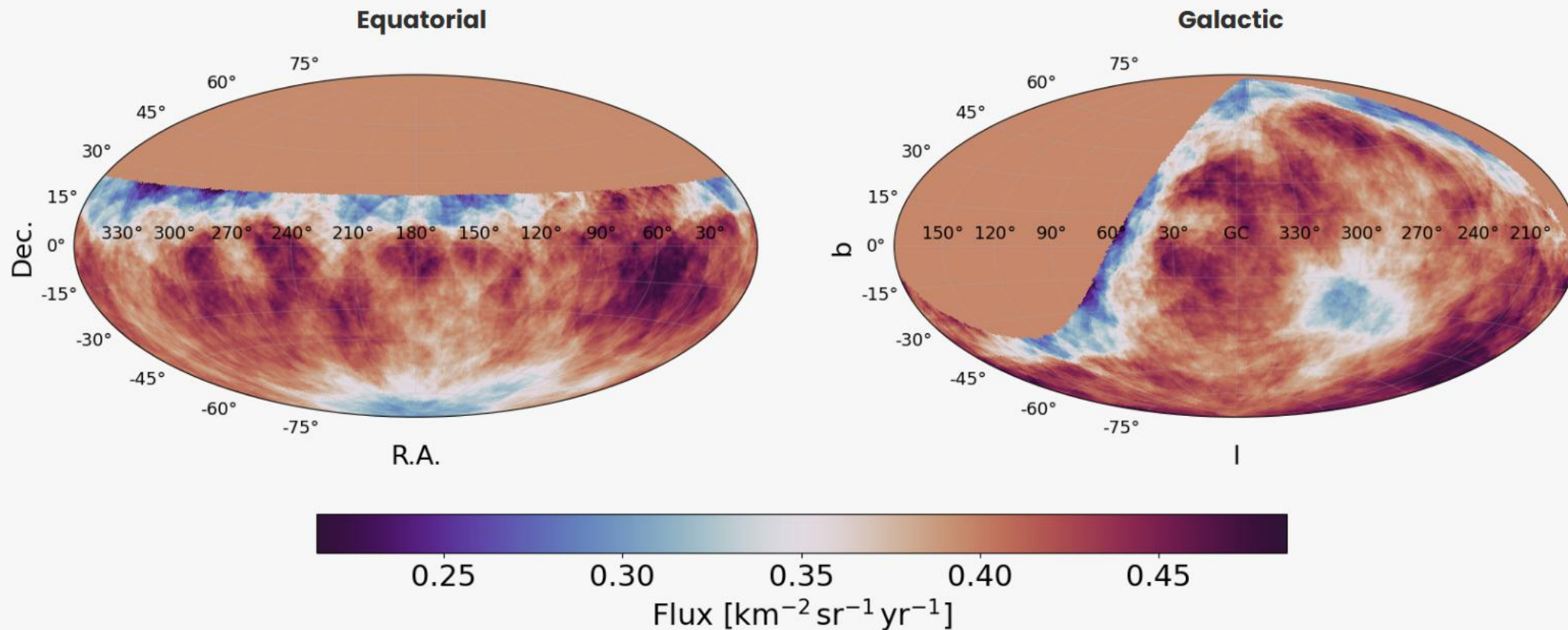


Smoothed Exposure Map, R=45°



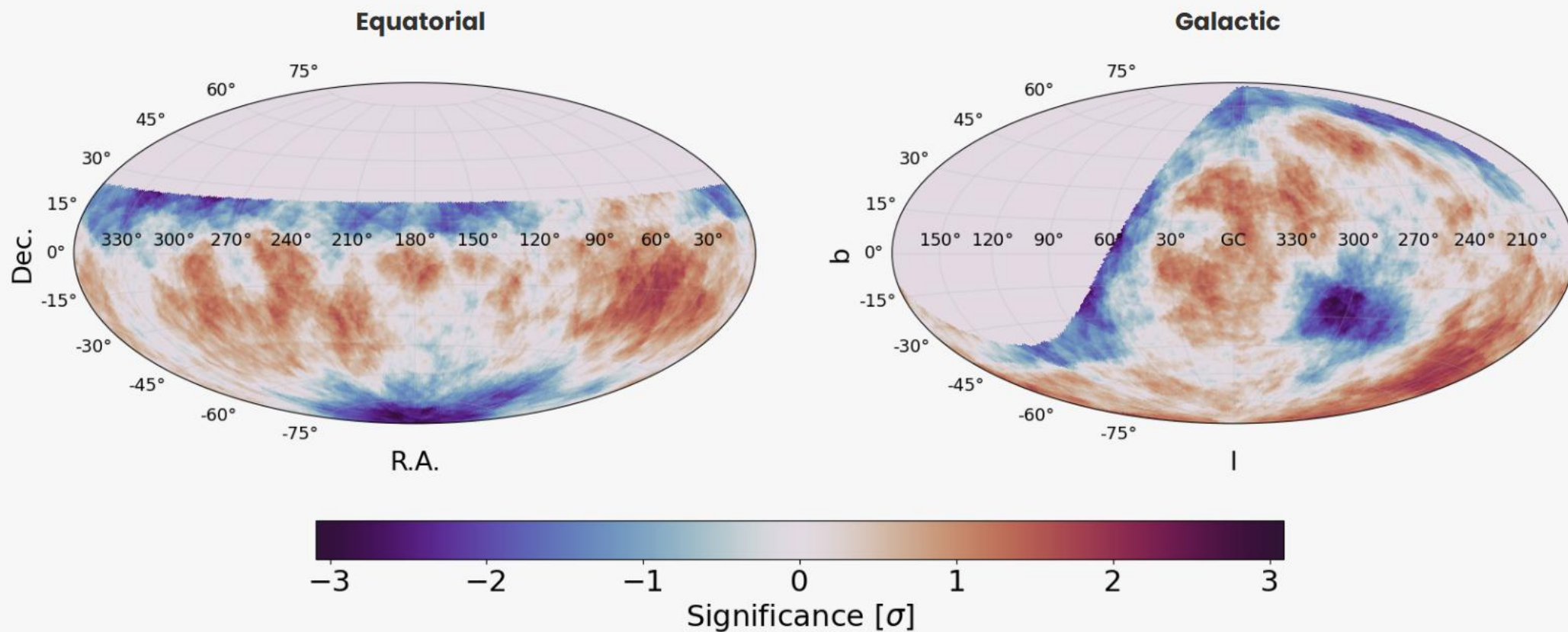


Smoothed Flux Map, R=45°



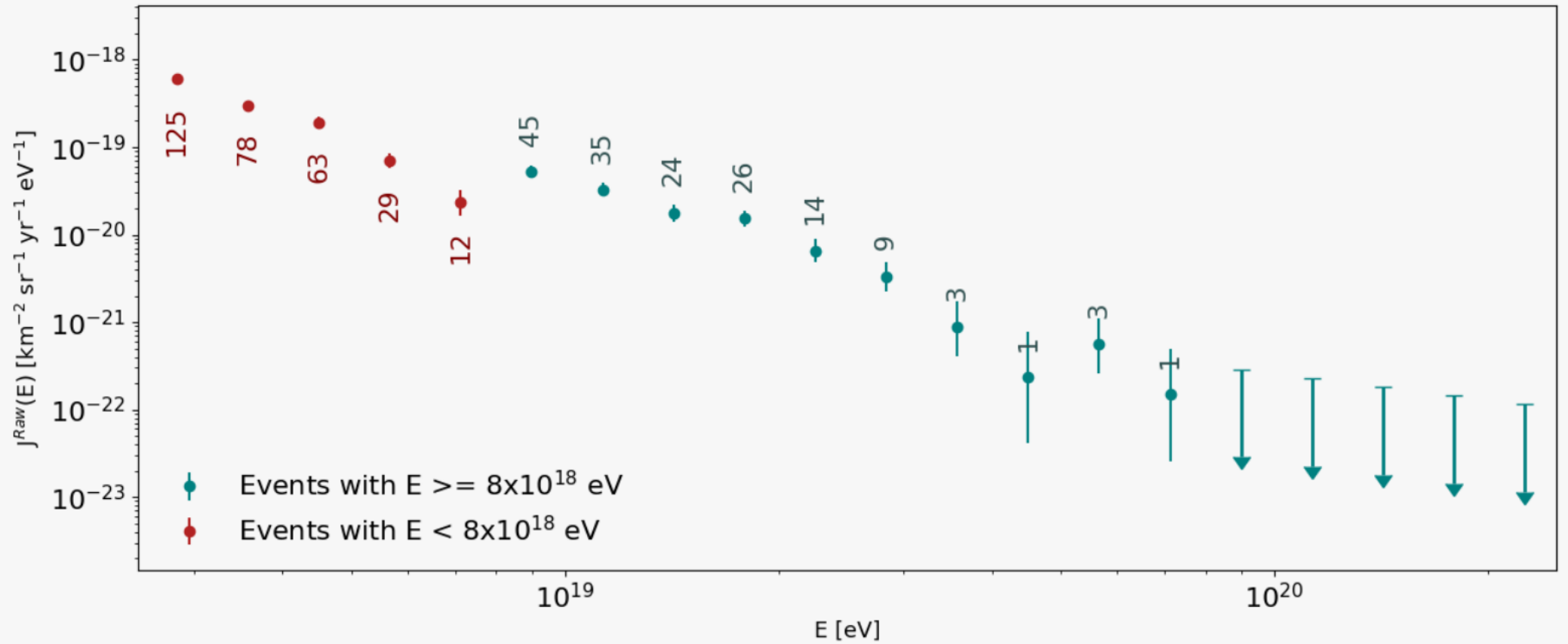


Significance Map, R=45°





Spectrum with event counts





Further Reading



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Pierre Auger Observatory