# High Altitude Water Cherenkov (HAWC)

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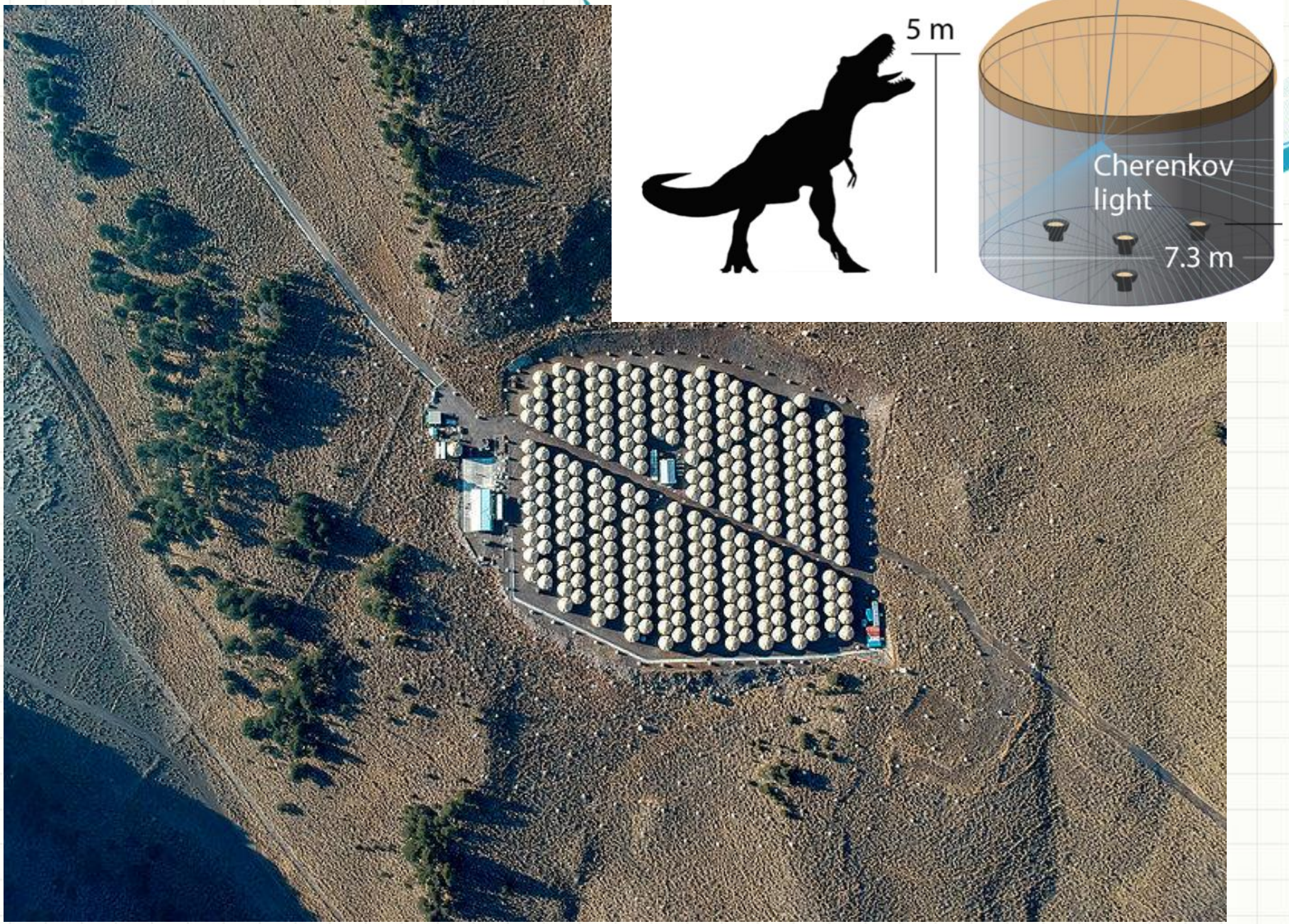
IPPOG GSI-meeting 23/05/19

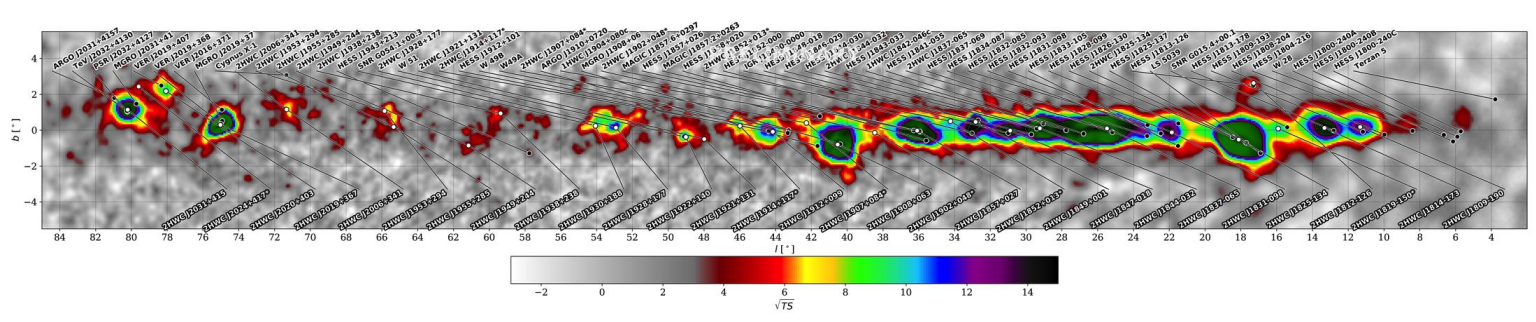
# HAWC in a nutshell

- Originally bi-national Collaboration Mex-USA
- It has been expanded: MPIK Heidelberg and IFJ PAN, Krakow.

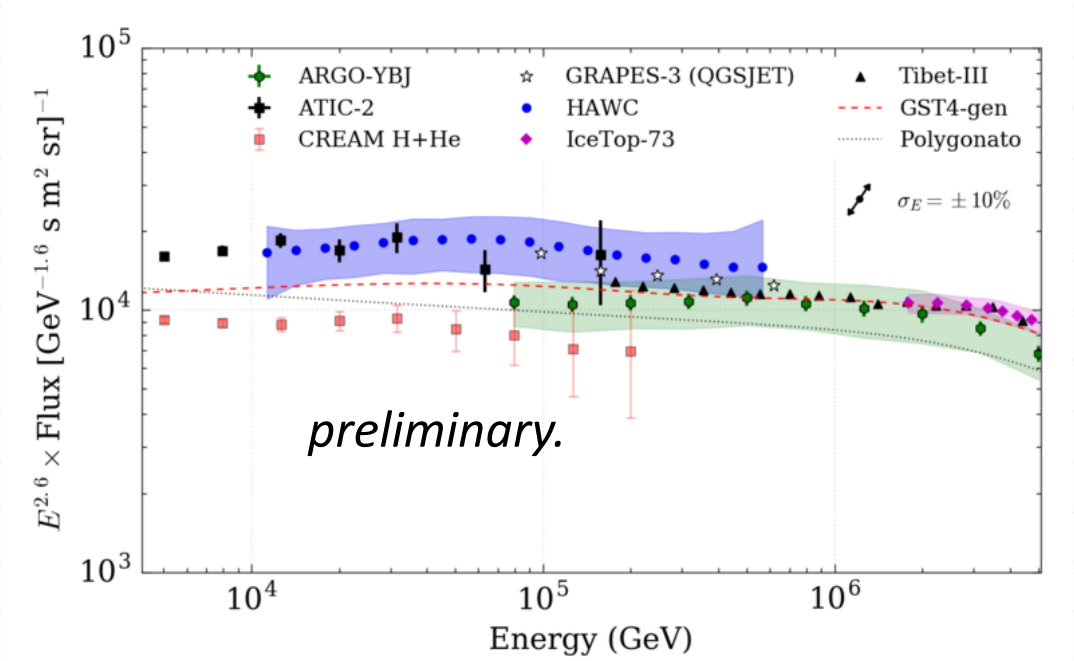
Further details on HAWC, tomorrow


5 m
Cherenkov
light
7.3 m

# We focus mainly on gamma rays



# But we do Cosmic Ray studies.

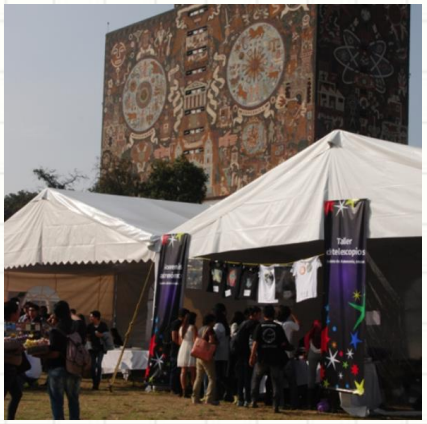


# Data analysis is important but also outreach has been important

Cosmic Ray community is very enthusiastic
Every year since 2009 we participate in

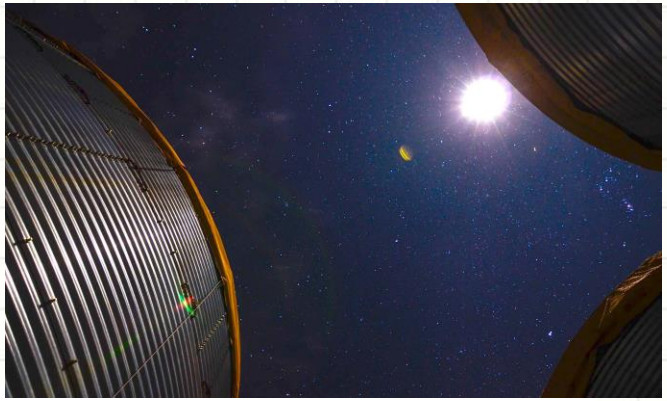
Cosmic rays outreach is done by HAWC collaboration

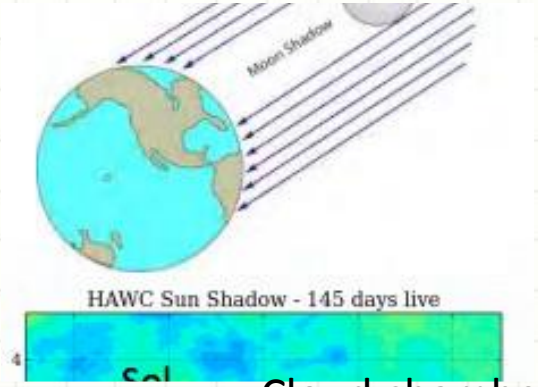
# 50 different locations all over Mexico



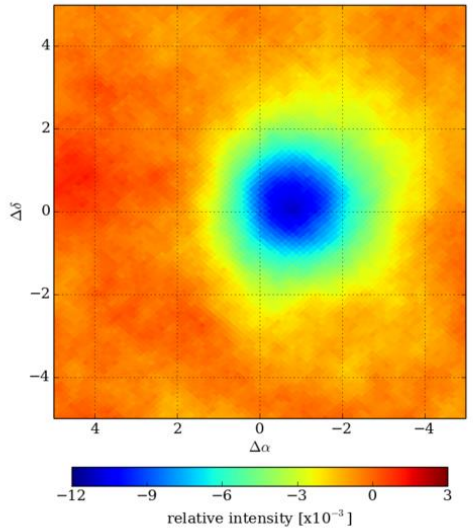
## Other Latin-American countries has joined this enterprise

# Linking concepts with visual evidence is a big success.



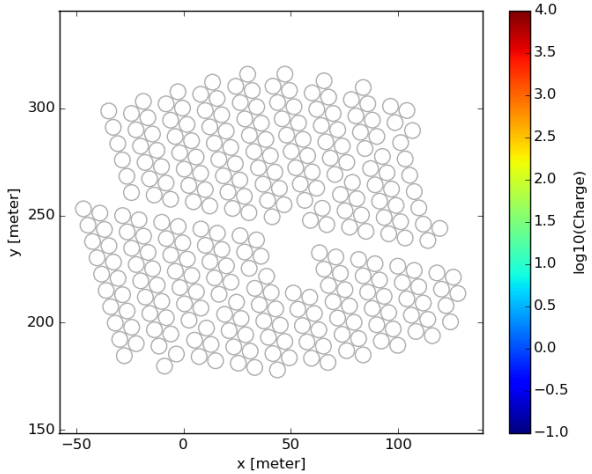


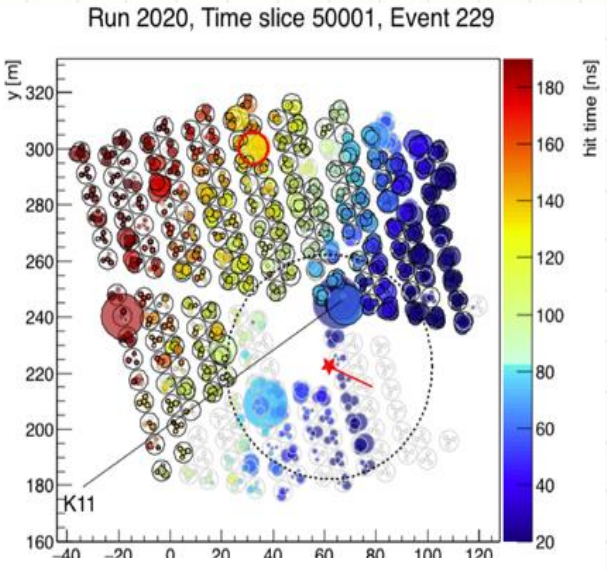

Cloud chamber

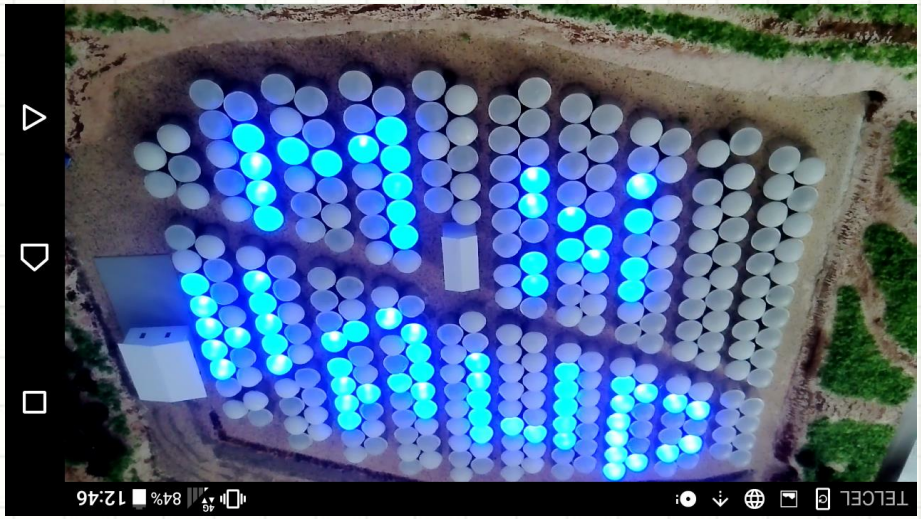


# We also developed other tools

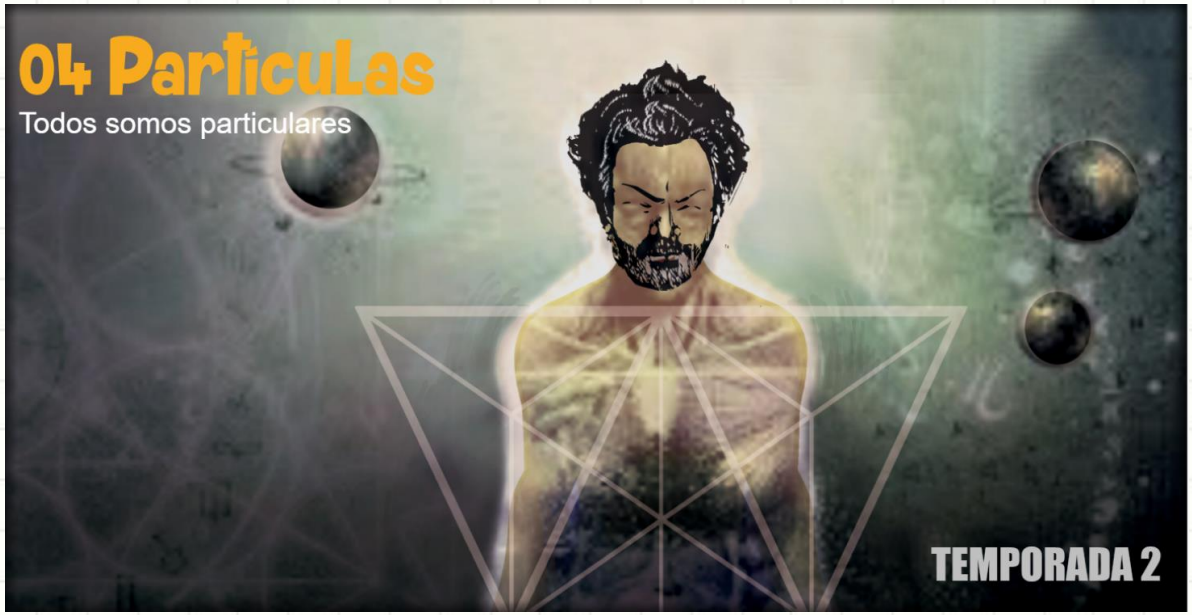
Event display



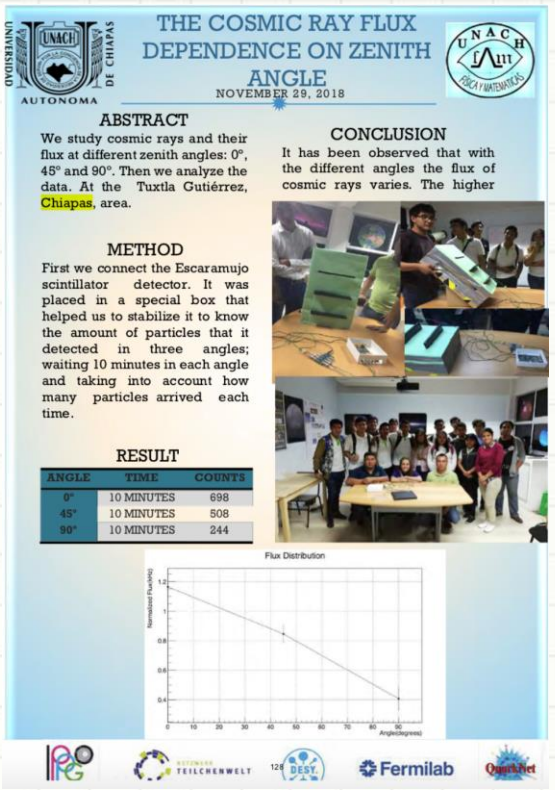
# Radio-Comic serie.




Radio-Comic: High quality sound with some animated images.

Target: young people. Anime style since it is very among Mexican teenagers (Samples available in YouTube)

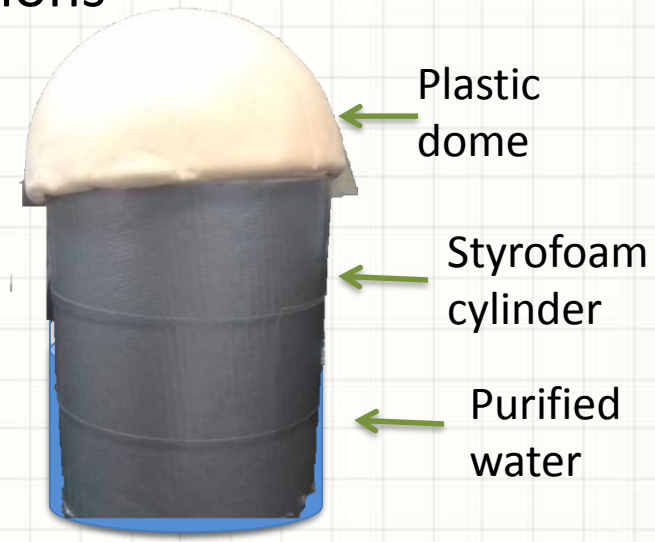
We are looking forward to participating in other events as The Cosmic Day.
HAWC colleagues from UNACH and BUAP Have already participated.



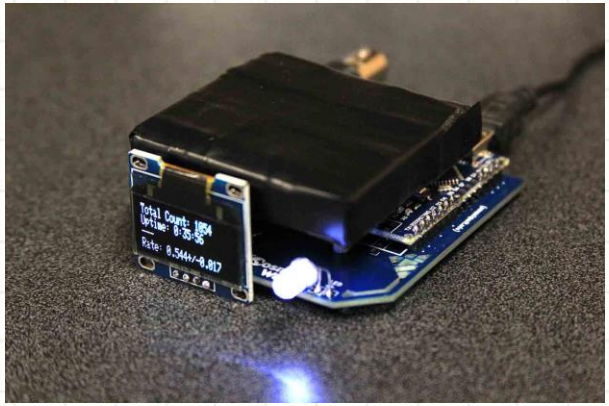
# Work on progress

A muon detector for outreach proposes, we explore several options

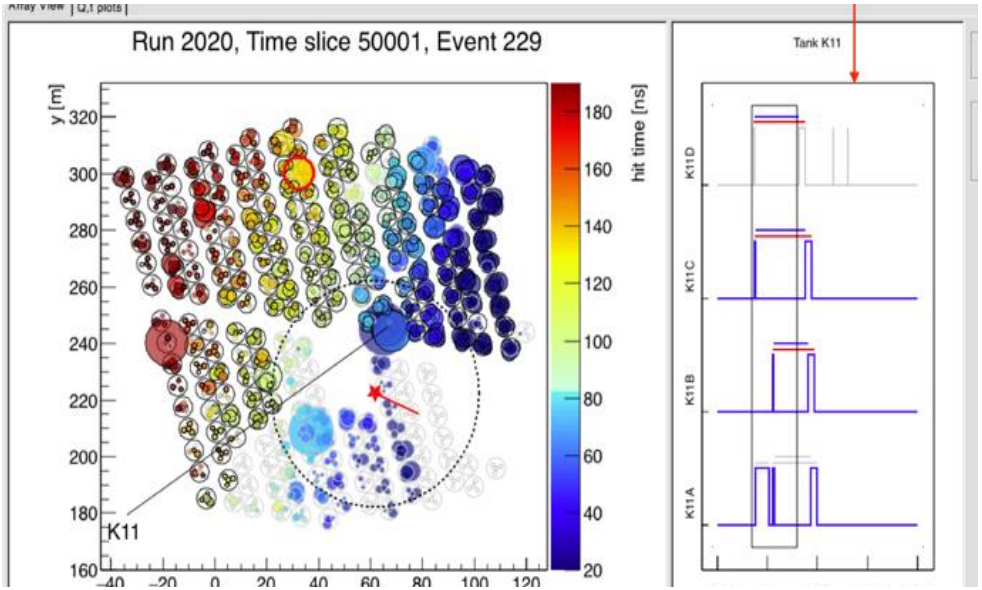
Nano Hawc: a mini Water Cherenkov, detector to ilustrated how works a real HAWC detector works.

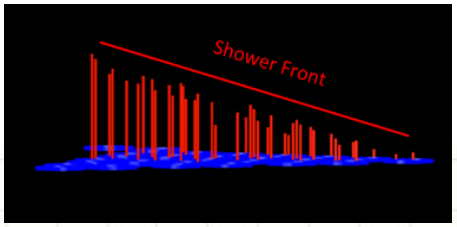


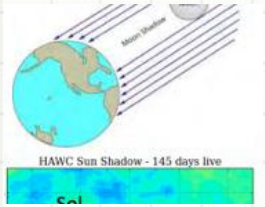

Cosmic Watch

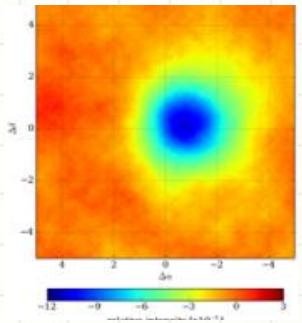


# Work in progress:MasterClass

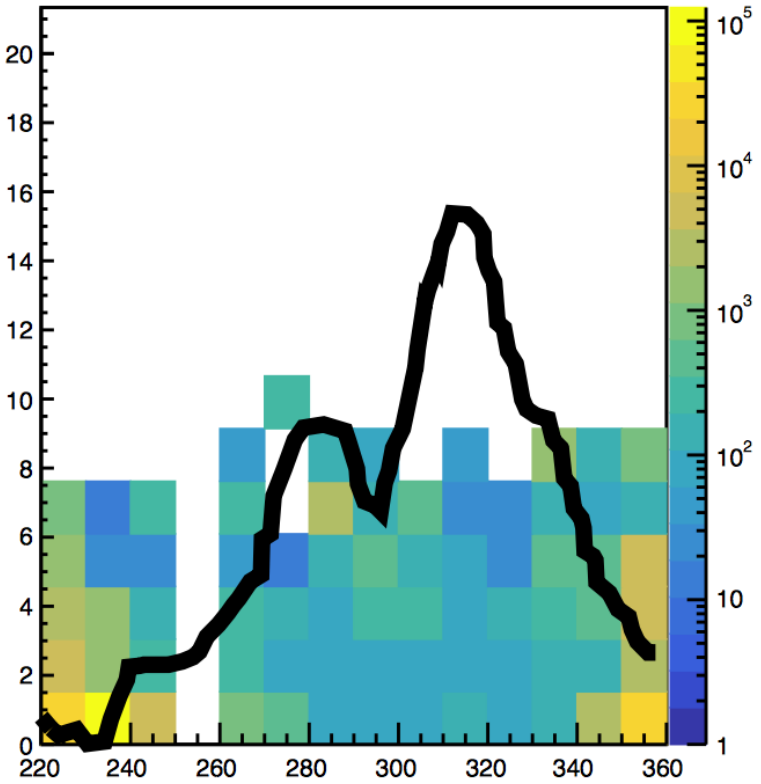




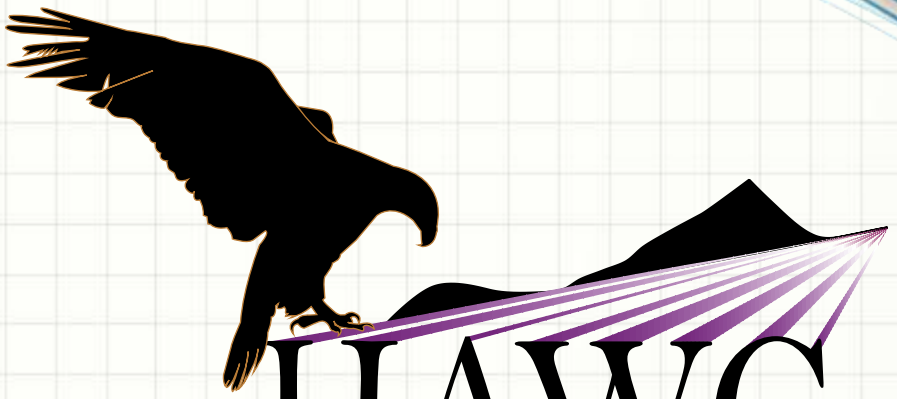
# HAWC can identified muons and do Tracking.




Muon image
of the mountains?

# Summary

1. HAWC collaboration is highly interested on outreach
2. We are interested on improving our outreach and participate in new activities.
3. Collaboration, feedback and share experiences.




High Altitude Water Cherenkov
Gamma-Ray Observatory

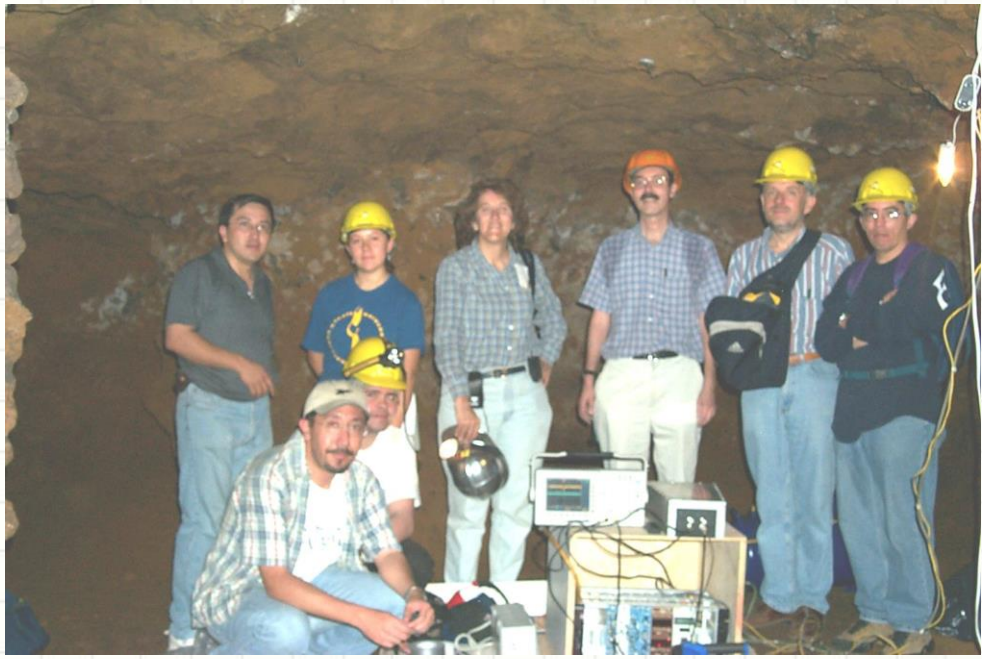
# THANKS

# Backup and extras

# Cosmic Rays: Muon-graphy

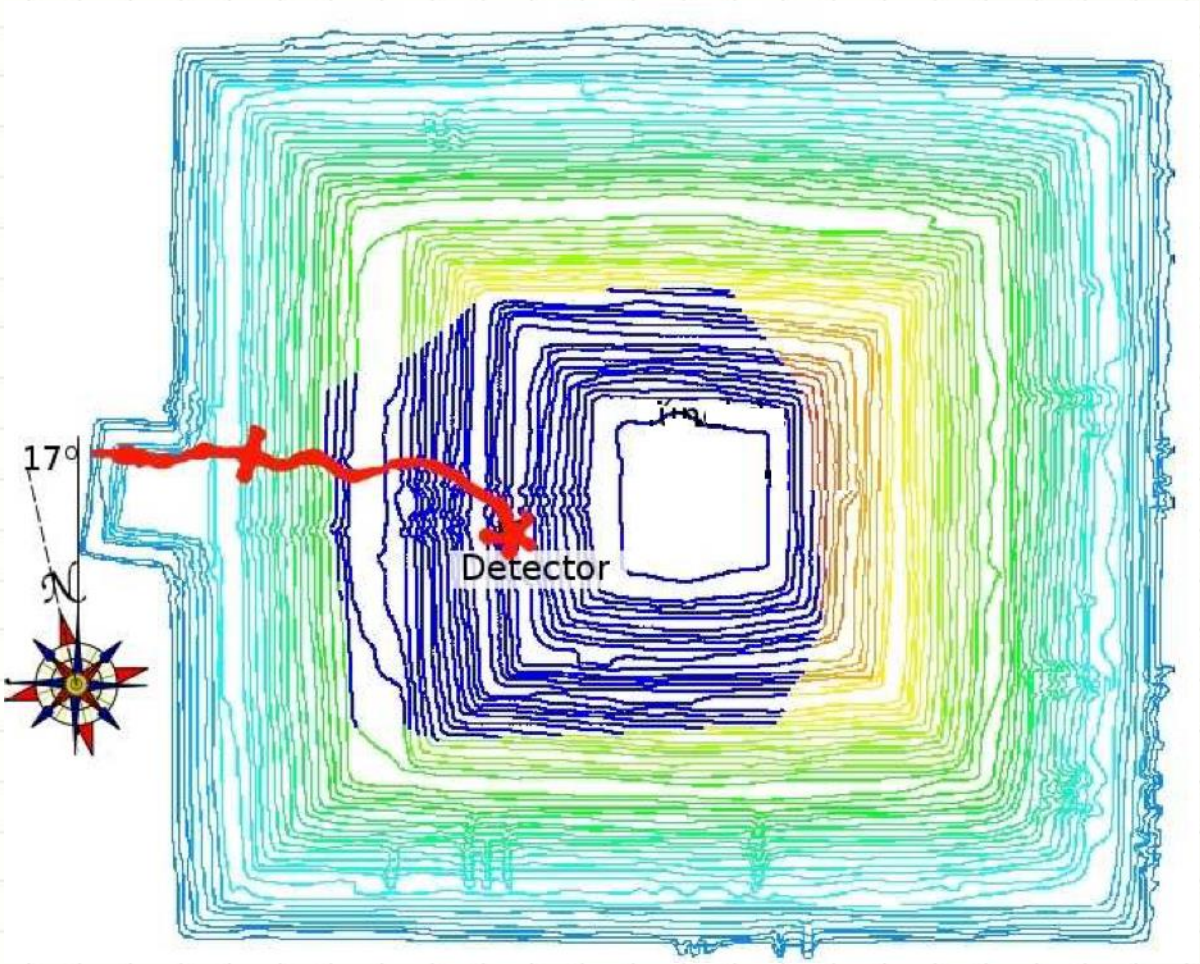
100% humidity
26 degrees.
No possibility to modified the environment.

Reduce entrance only
Some sections 60 cm width
80 cm height

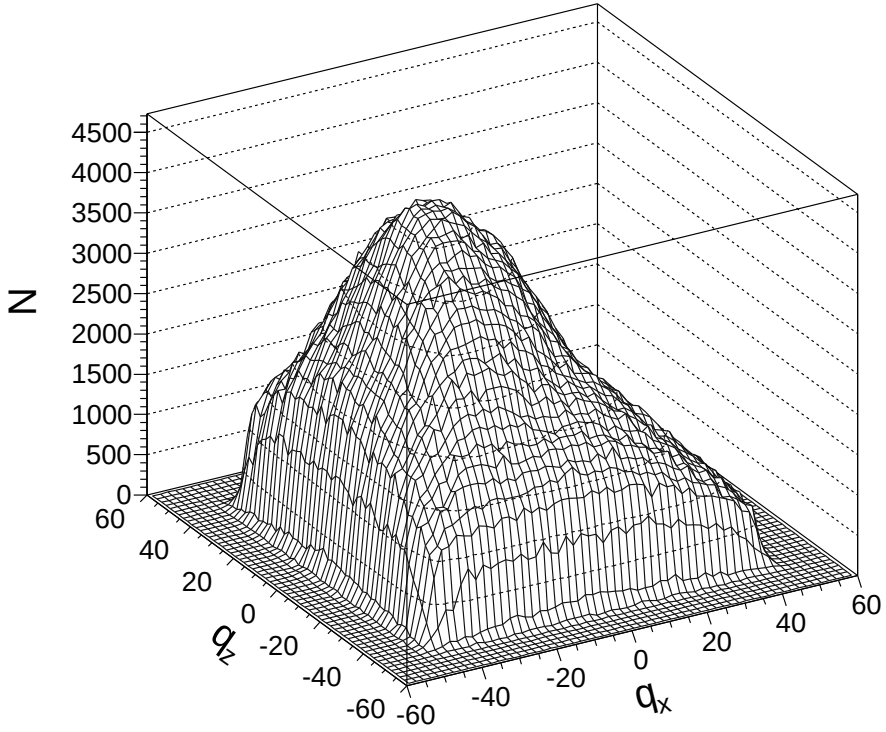


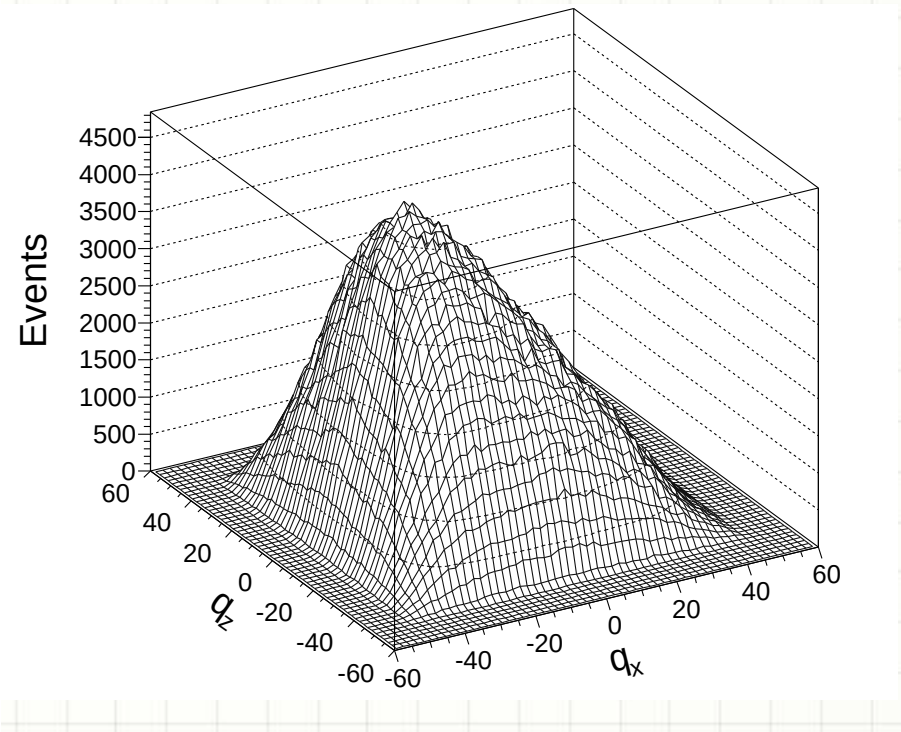
# Detector Position

Blue contours
Detector FOV



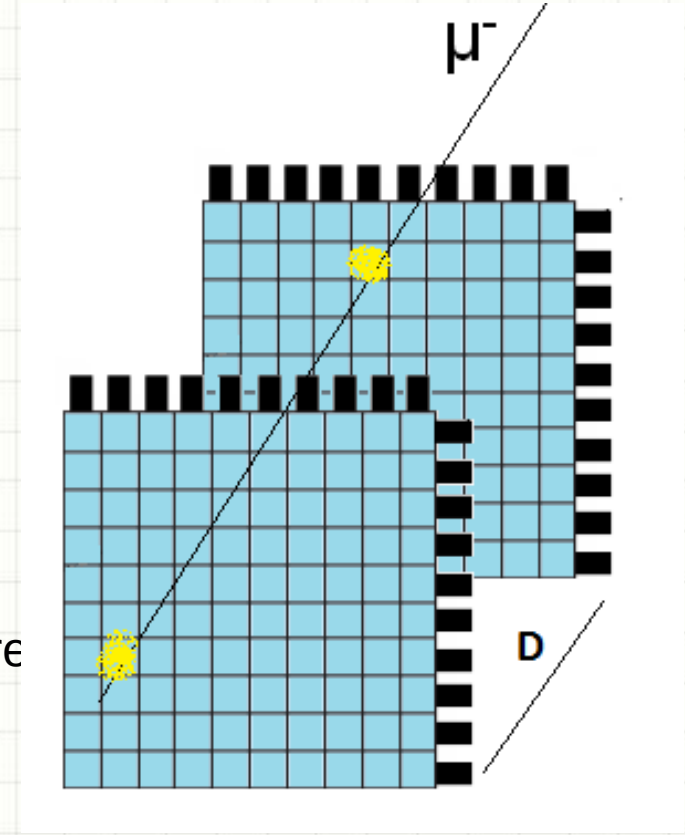
# Simulation vs Data



Peligroso para poblaciones aledañas.

Prevención de desastre naturales



# From elementary school

# To high school