



# The HAWC observatory and the GADF

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for the HAWC Collaboration

VHE data format meeting  
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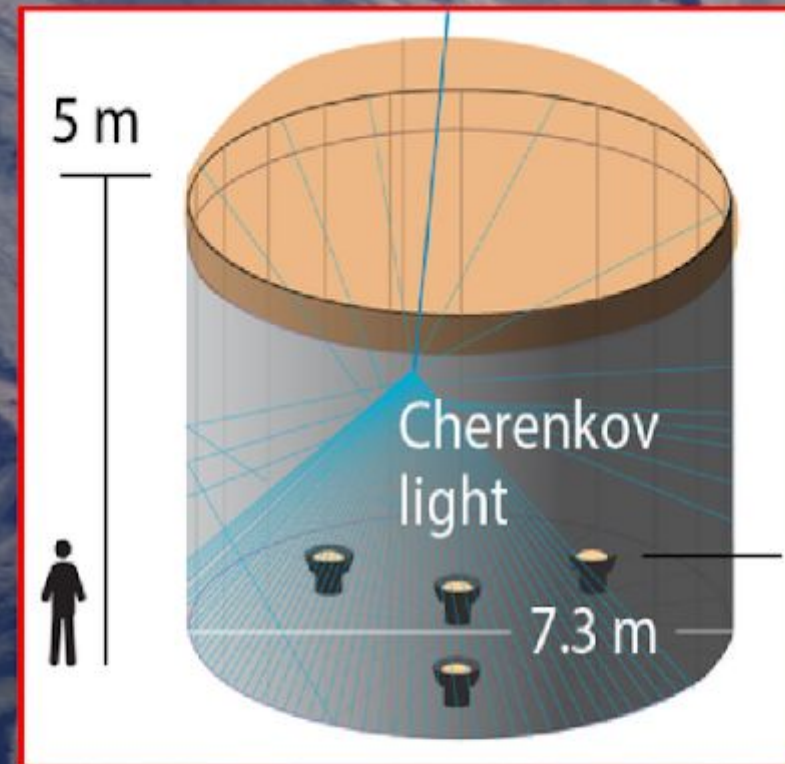
# High Altitude Water Cherenkov Observatory



Pico de Orizaba  
5600 m

High Duty Cycle

Large FoV ( $\sim 2$  sr instantaneous) — Sensitivity to Extended sources  
High energy Sensitivity — Highest energy accelerators  
Reconstructed energies ranging between 0.3 to a few hundred TeV



HAWC  
4100 m

Sierra Negra  
4800 m

Google

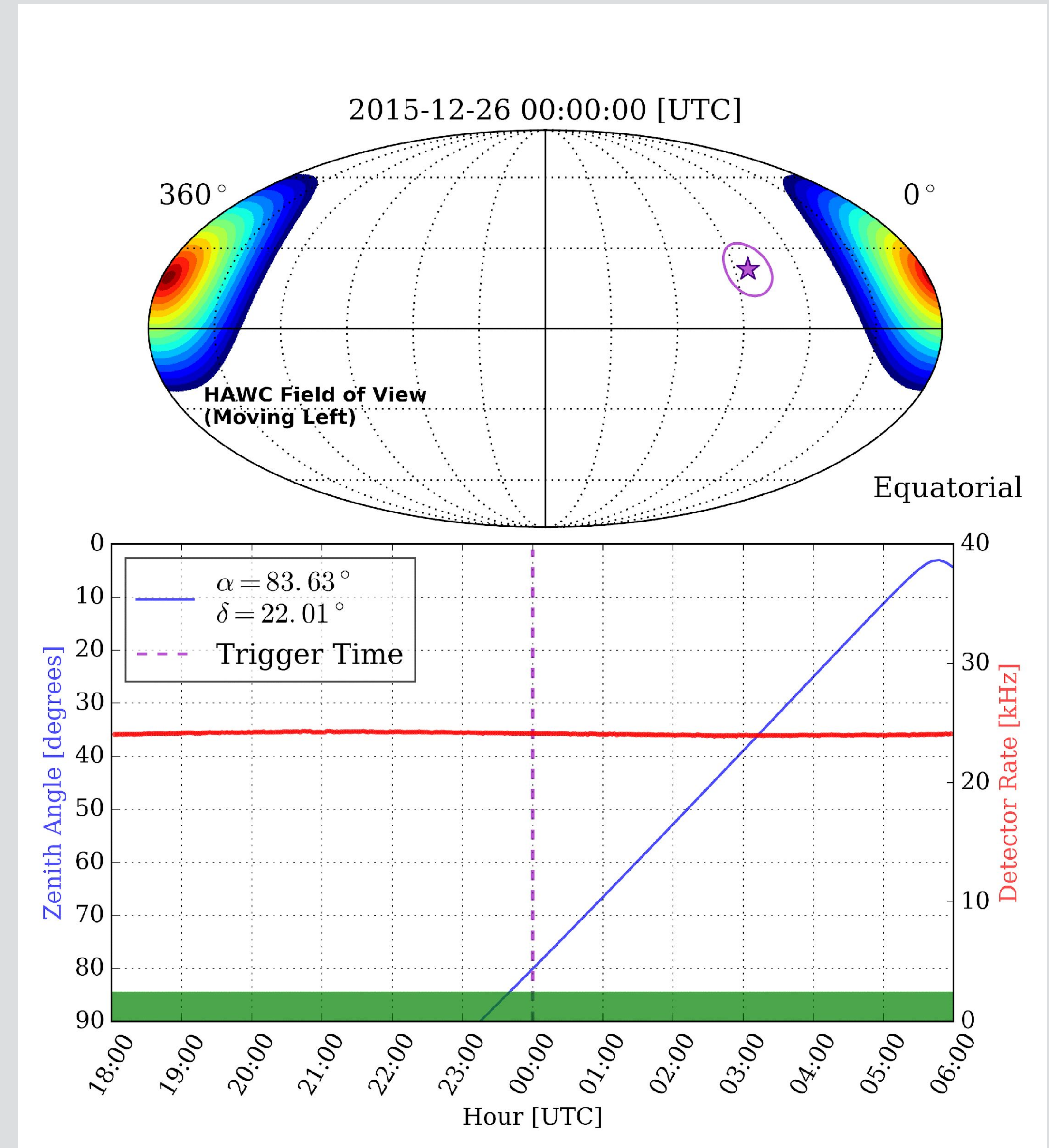
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# How Does HAWC Operate?

The sky moves over HAWC, we say sources “transit” through our FoV

On all of the time, day or night

IRF then corresponds to zenith angle weighted declination bands





# Some Context

- HAWC has heavily invested in 3ML, enabling multiwavelength + messenger fits
  - Gammapy being more VHE focused brings synergy, not competition
- Participating in GADF provides parallel analysis pipeline
- SWGO (potential successor experiment) obviously benefits from this as primary focus
- GADF can give better legacy dataset with minimal investment after HAWC is gone

# Current Status

- MPIK group in HAWC worked to show GADF is mostly compatible
  - [PR #168](#) -> optional RA/DEC pointing, OBS\_MODE = DRIFT
  - IACT focus actively inhibits interest in HAWC
- GADF-compliant event lists and GTIs produced, together with IRFs as map in sky coordinates.
- Successfully reproduced published HAWC results with this dataset (see [these proceedings](#))
- Working on a complete production and more extensive validation



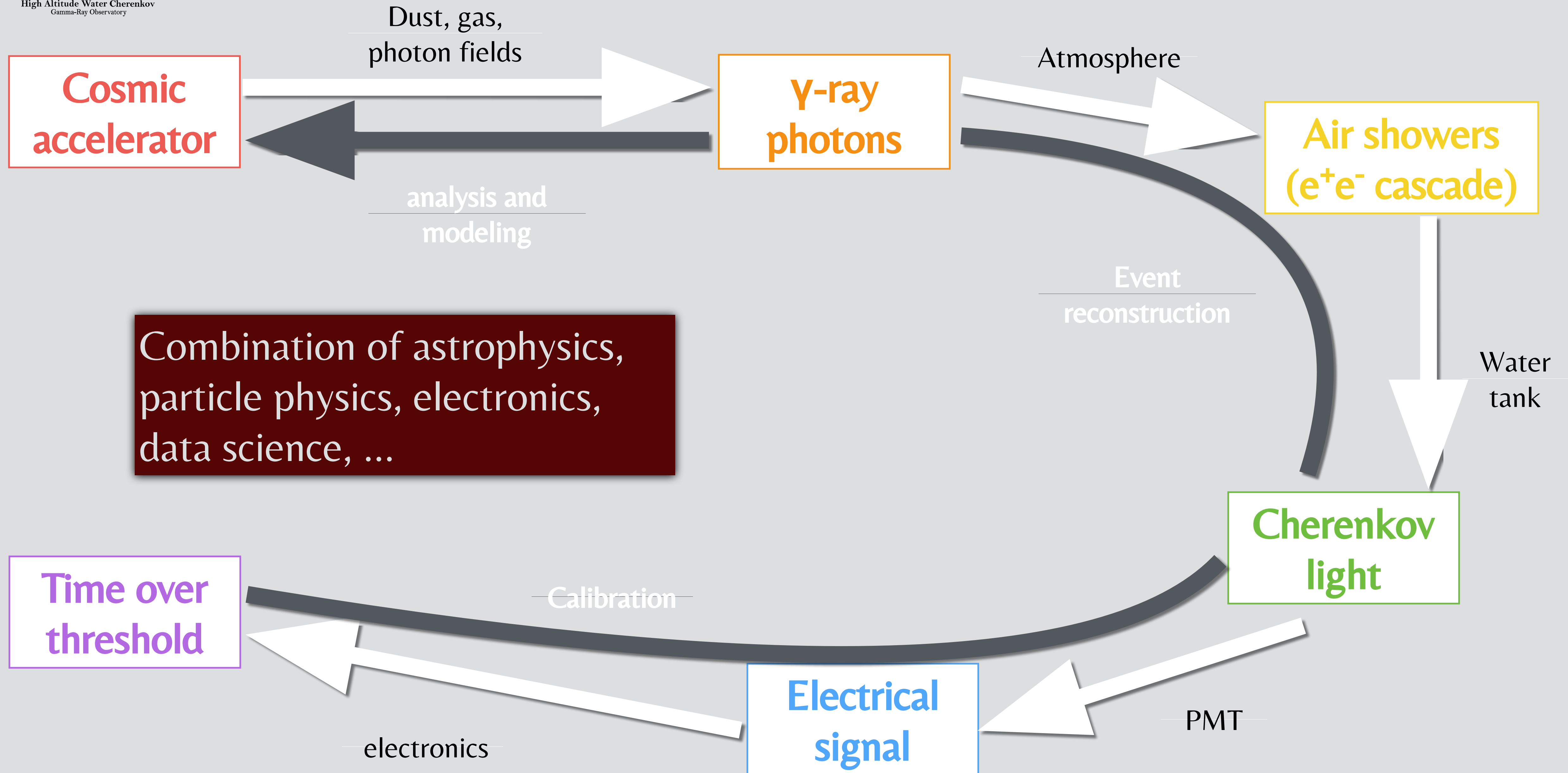
## a HAWC “wish list”

- Maps are a very important data product for wide-field instruments.
  - It would be nice if we could have a comprehensive standard
  - e.g. HAWC and SWGO maps could be used interchangeably.
  - This includes counts, background and IRF maps
- (Sky) pointing never mandatory
- Definitions and data handling flexible enough (i.e. one HAWC run is  $\leq 24$ h, IRFs don't change between runs...)



# Backup

# $\gamma$ -Ray Astronomy with HAWC





# HAWC's $\gamma$ -Ray Sky

All-sky view;  $0.0^\circ$ ; 1523 days

