Outline of the paper of the shadow of the Moon

Xianwu Xu

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Suggested titles:

The Energy Scale of Milagro Detector Determined (Estimated) by the Shadow of the Moon

The Energy Response of Milagro Detector Determined (Estimated) by the Shadow of the Moon

The Absolute Energy Calibration of Milagro Detector implemented by the Shadow of the Moon

More …

Welcome your input…..

Suggested outline:

1. Motivation
2. Milagro Detector
3. Data Analysis
4. Simulation of the Shadow of the Moon
5. Result

Task Assignment?

1. Motivation: ***Cy, Bob, …***

2. Milagro Detector: ***Cy, Bob, …***

3. Data Analysis: ***Xu, Bob, …***

4. Simulation of the Shadow of the Moon: ***Bob and Allen***

5. Result: ***Bob, Xu, …***

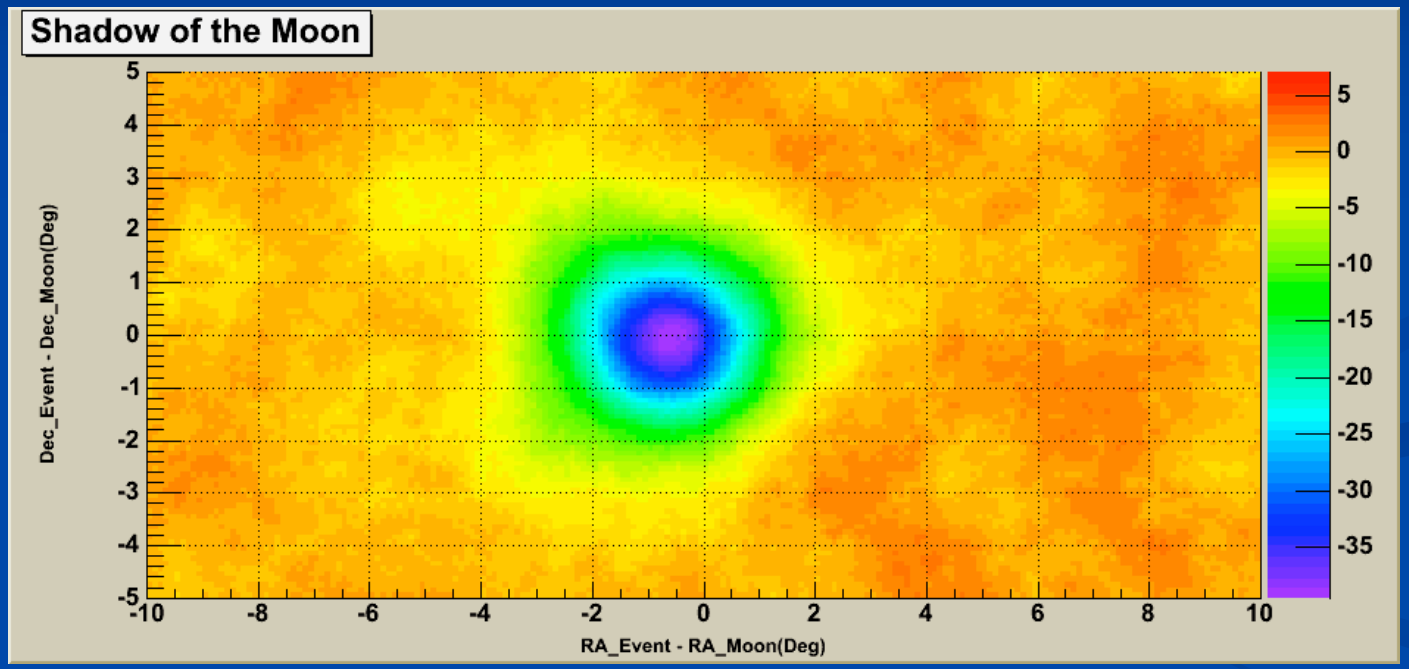
Contributions from all collaboration members are really welcome!

Analysis method of magnetic deflection:

The basic idea:

1. Generate the magnetic deflection table for different rigidity by the simulation.
2. Search for a rotation matrix once per 2˚ according to the position of the Moon.
   (ha,dec)->(_,_)->(magnetic flection)->(_',_')->(ha',dec')->(rotation matrix)->dec=dec'=0.
3. Rotate each event by this matrix.
4. Use skymap method to estimate the background.
5. Get the shadow of the Moon.

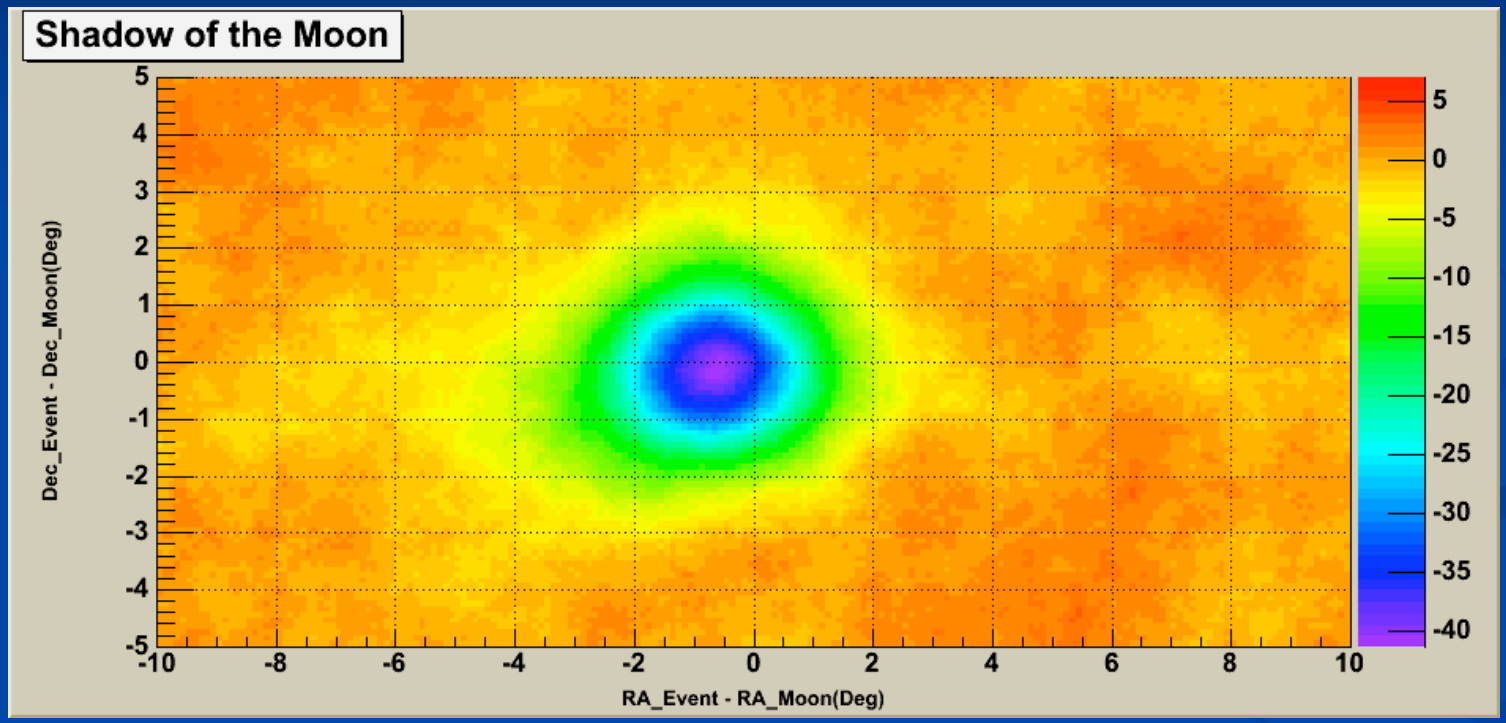
Shadow of the moon (no rotation, Nfit>=20 and Zenith<=45˚):



_x = 1.15˚±0.04˚ _y = 1.07˚±0.03˚

Xc = -0.66˚±0.03 Yc = -0.07˚±0.03˚

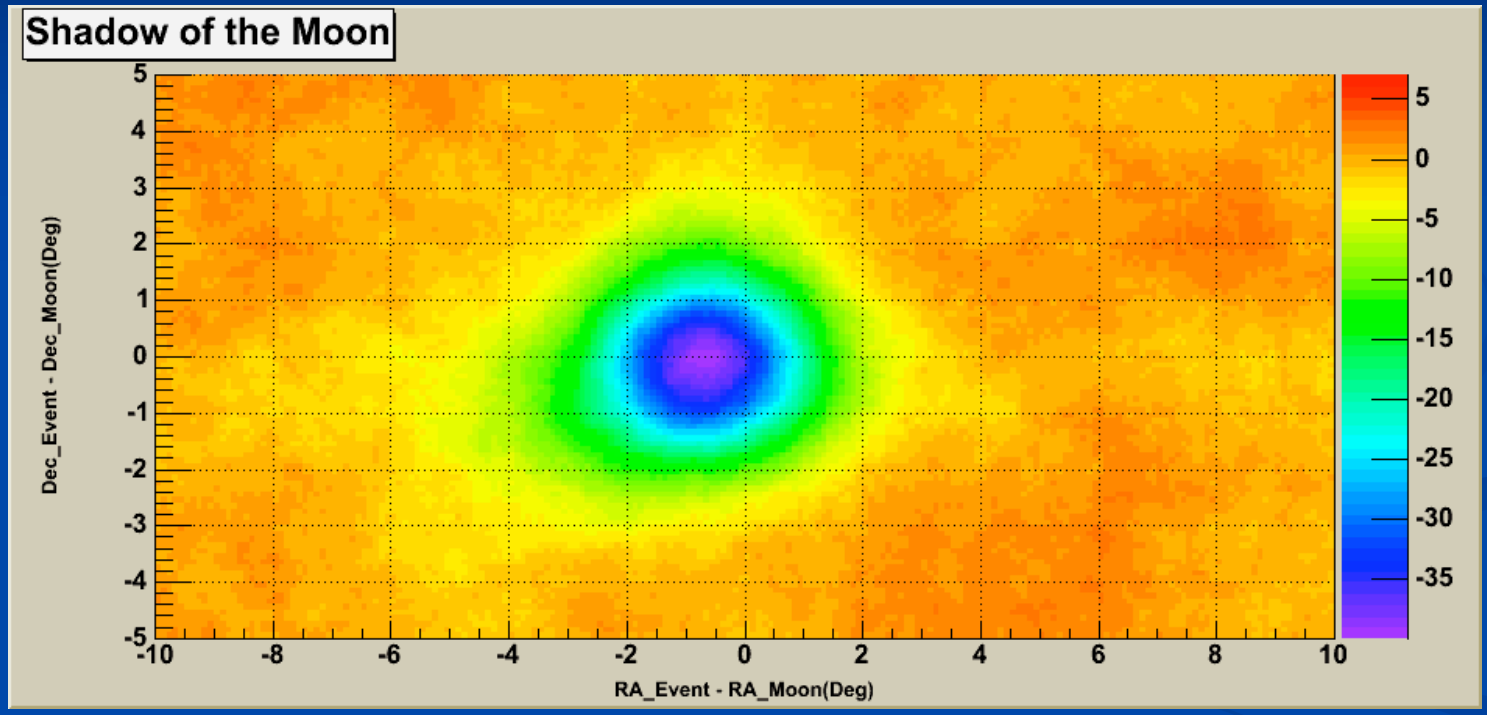
Shadow of the moon (rotation, Nfit>=20 and Zenith<=45˚):



$\bar{x}$ = 1.25˚±0.03˚ $\bar{x}$ = 0.96˚±0.03˚

Xc = -0.76˚±0.04 Yc = -0.19˚±0.03˚

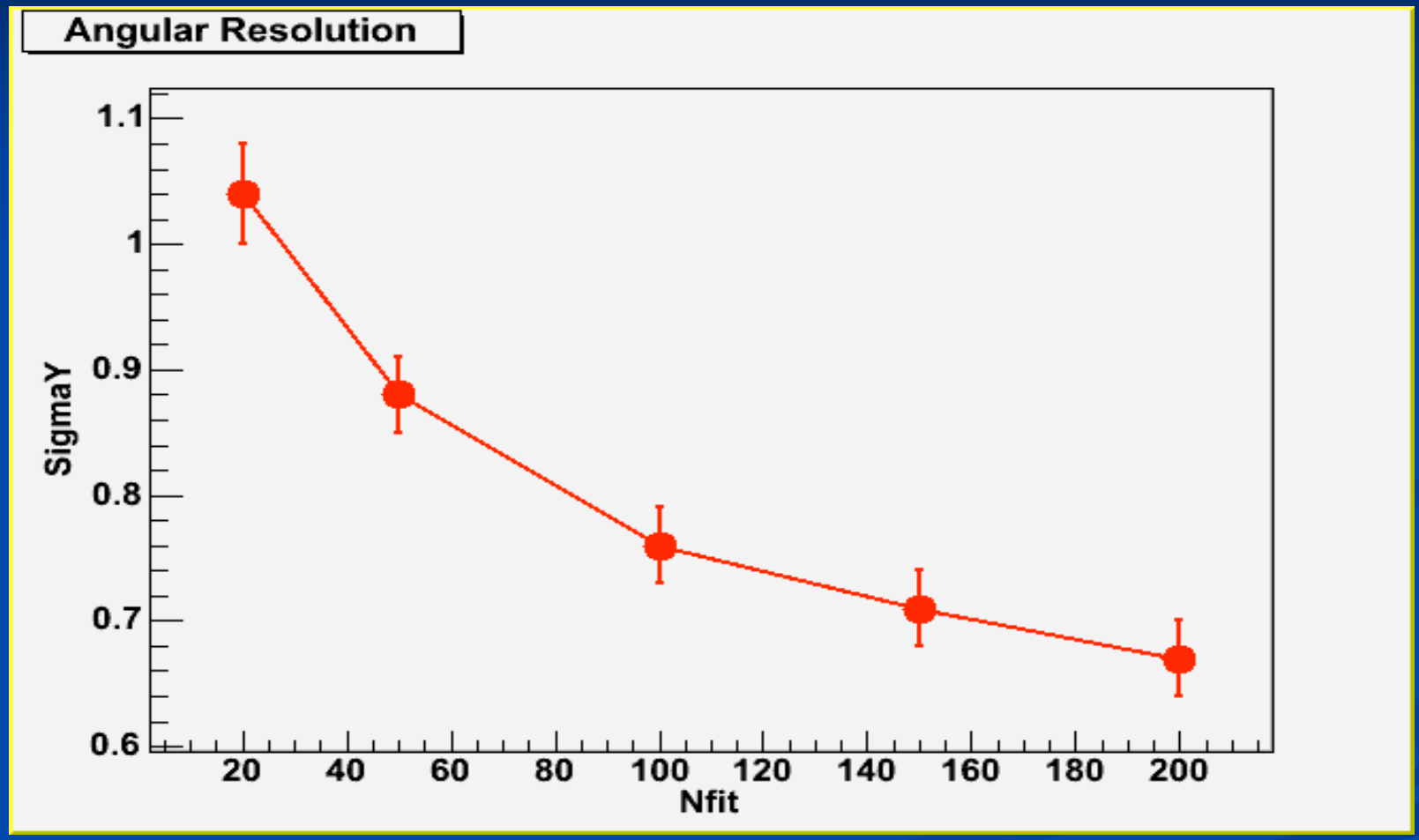
Shadow of the moon (rotation, Nfit>=10 and Zenith<=45˚):



$\sigma_x = 1.26^\circ \pm 0.03^\circ$ $\sigma_x = 0.97^\circ \pm 0.03^\circ$

$Xc = -0.78^\circ \pm 0.04$ $Yc = -0.19^\circ \pm 0.03^\circ$

Angular Resolution:



Next ....

Analysis the shadow of the Moon for different nfit cuts and rigidities, and compare with the simulation results.

In Summary:

Let us work together and get the paper published ASAP!