



高海拔宇宙线观测站
Large High Altitude Air Shower Observatory



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The preliminary Geminga results of WCDA full array

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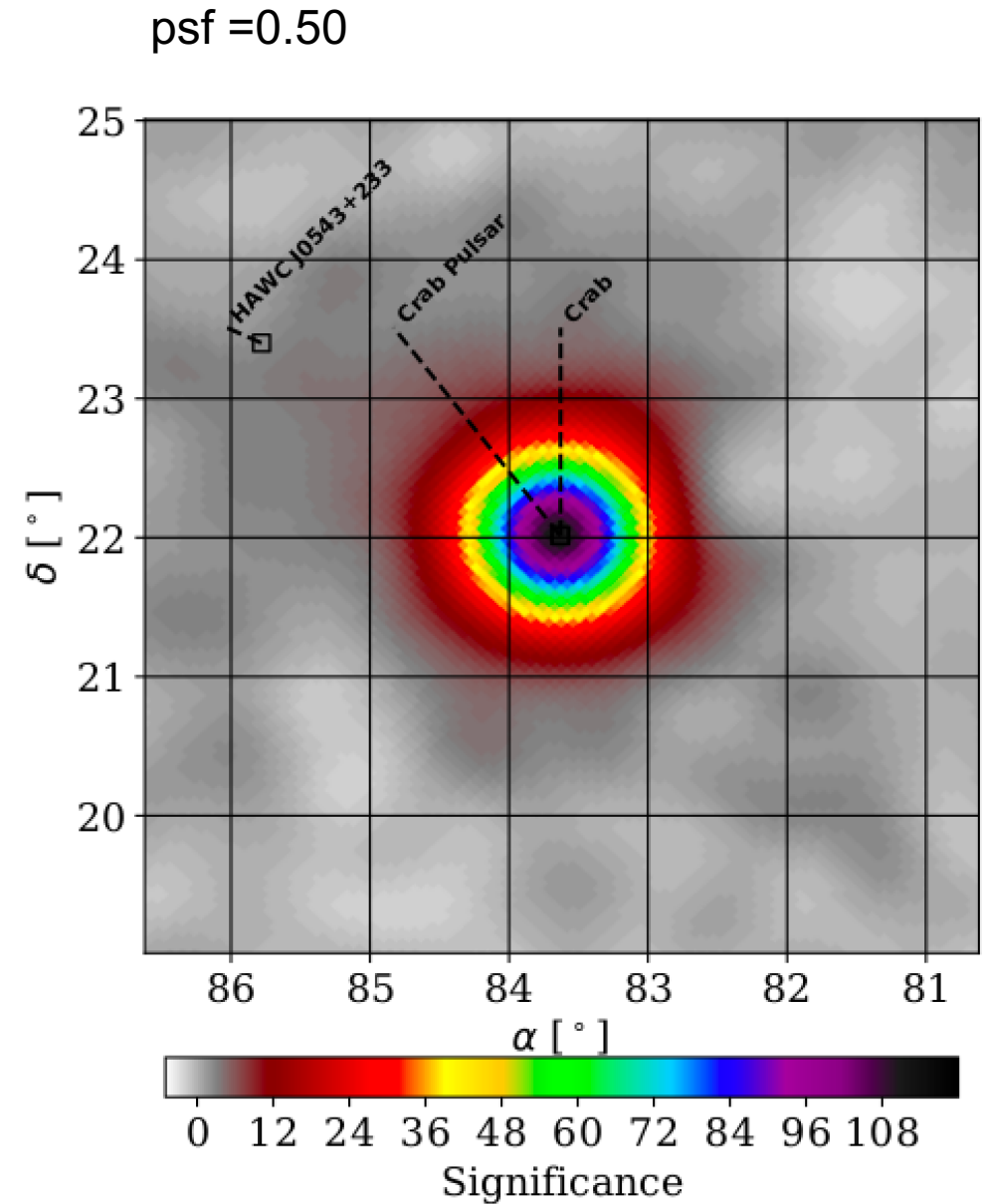
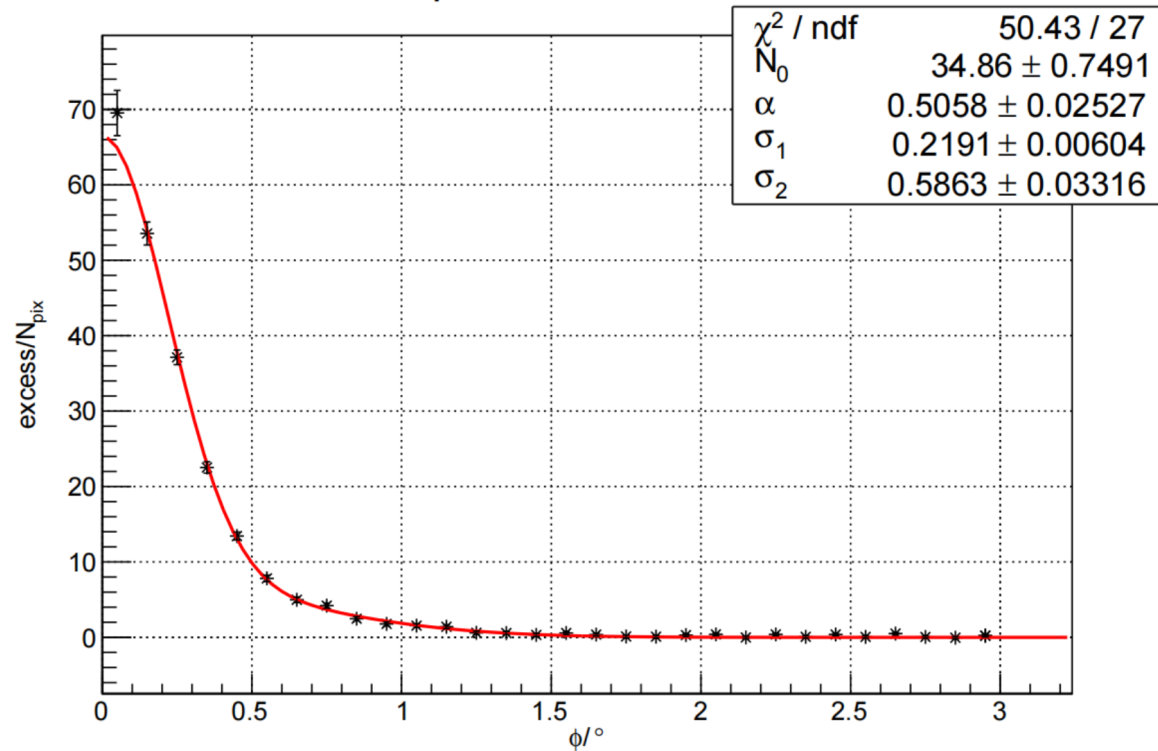
Oct. 13th, 2021

OUTLINE:

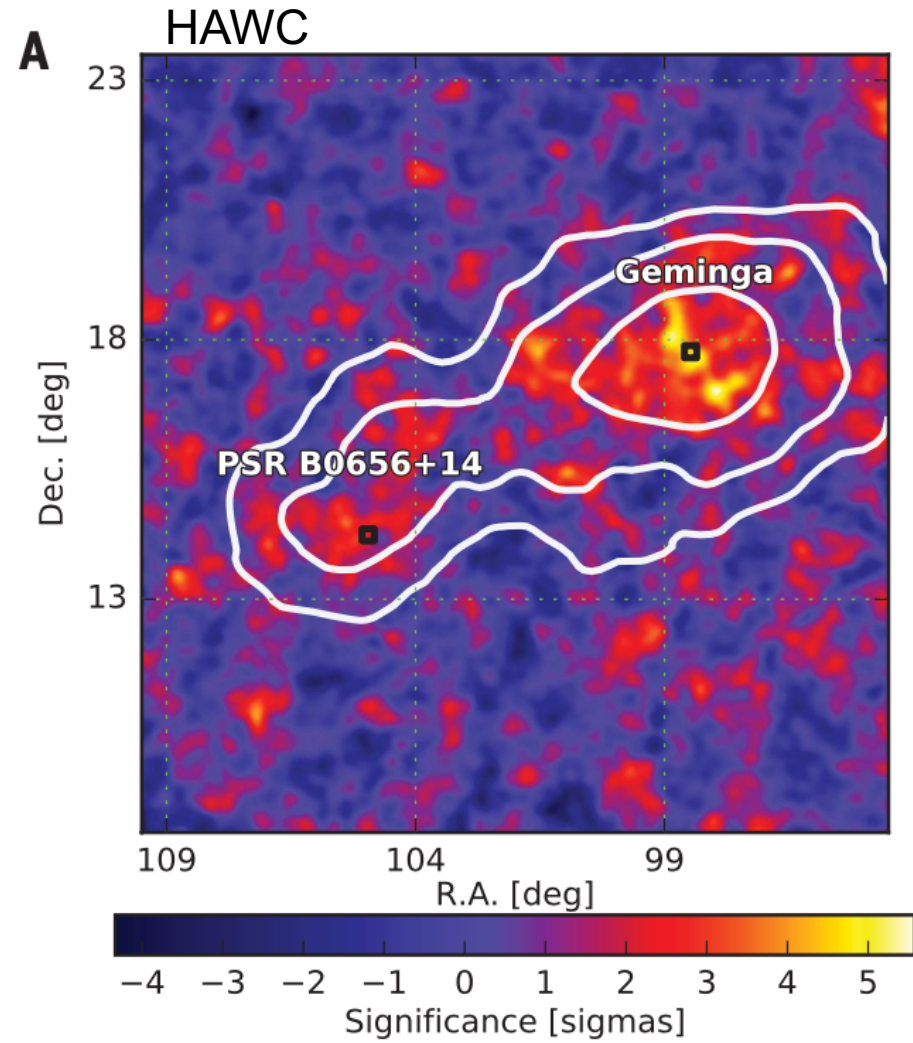
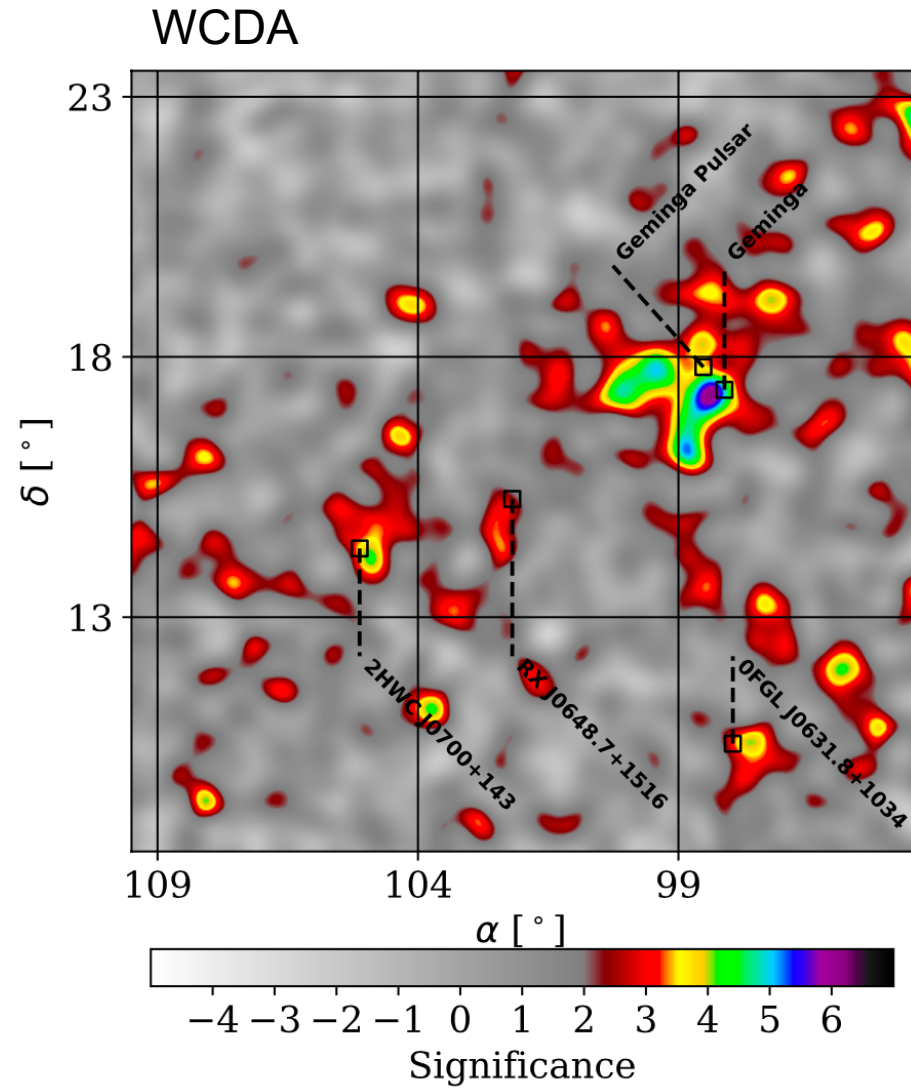
1. *WCDA* 数据介绍
2. *Geminga*初步结果
3. 模拟 (能谱) 存在的问题
4. 总结及下步工作

Crab results:

Experiment data: 20210305-20210815

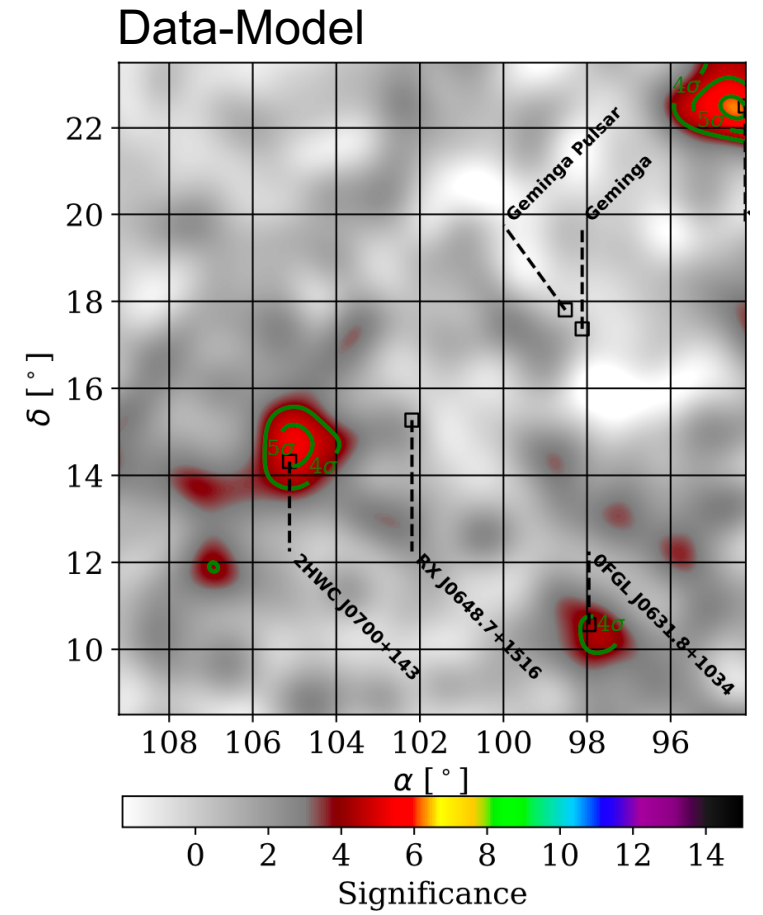
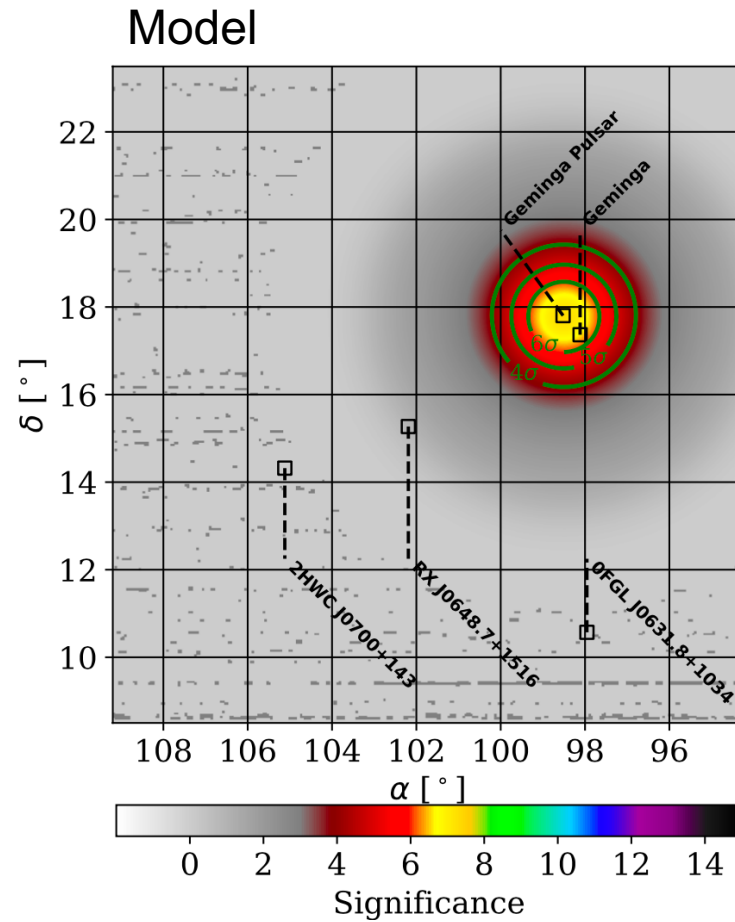
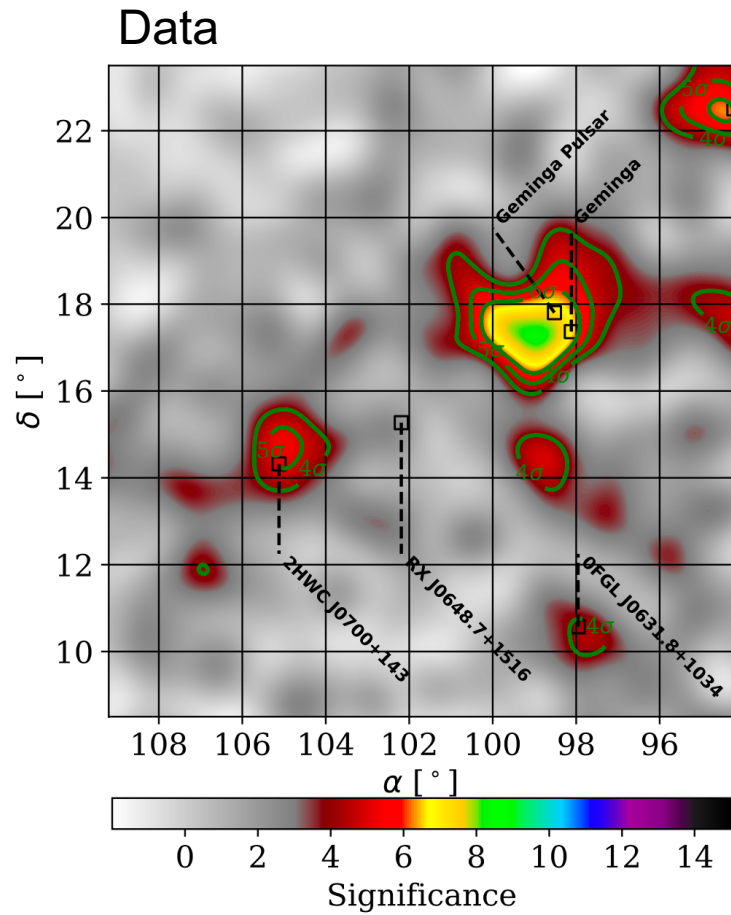


Geminga and Monogem: psf = 0.25



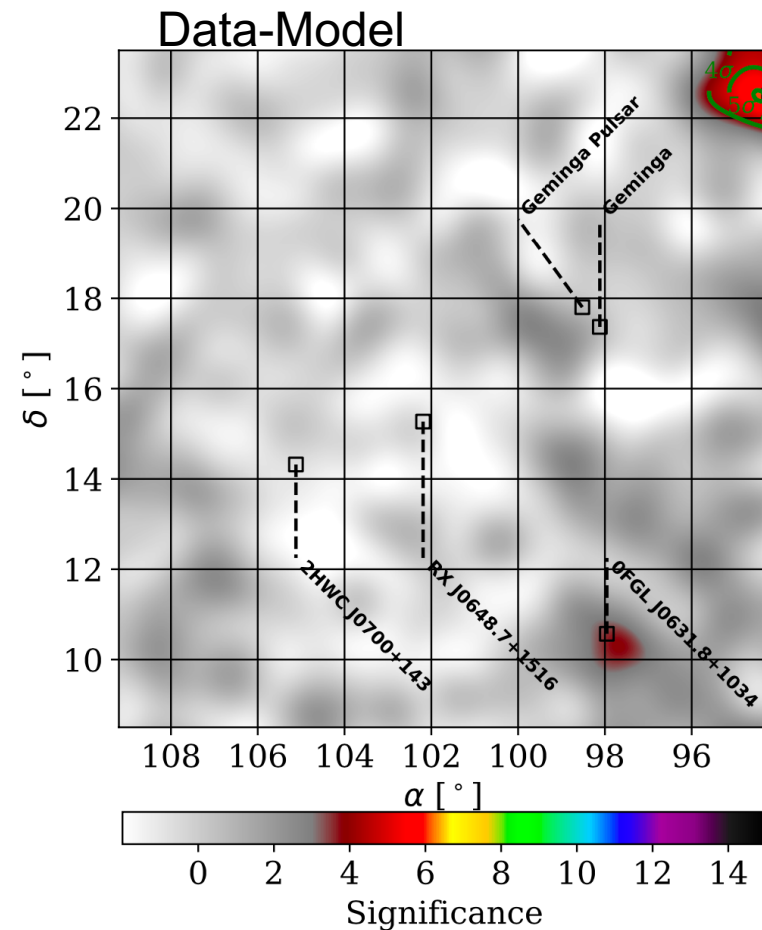
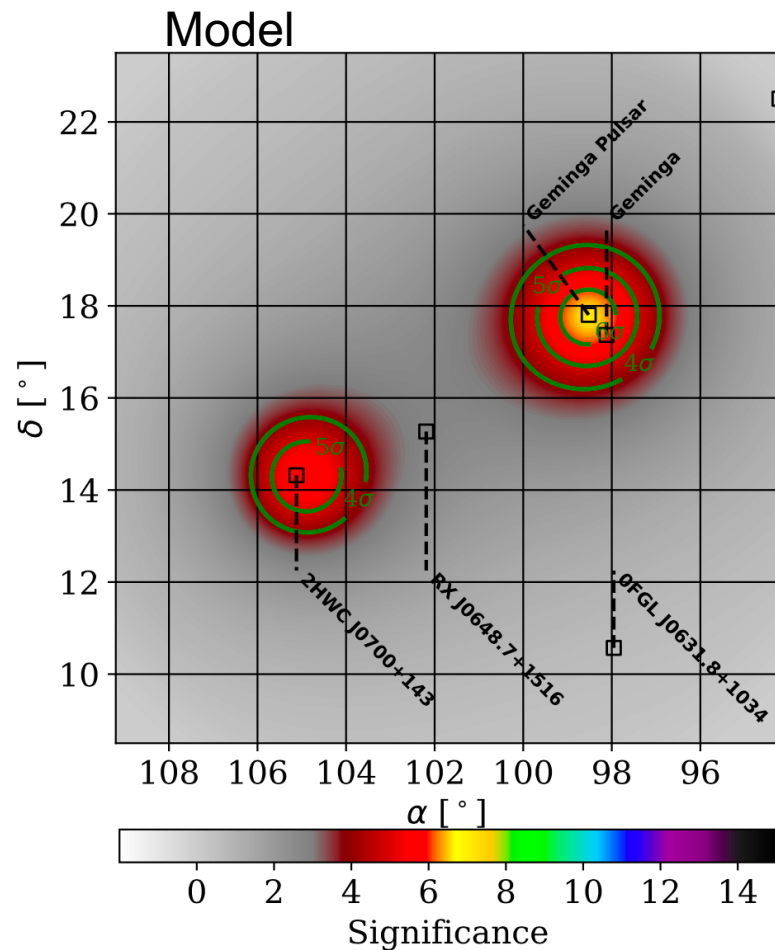
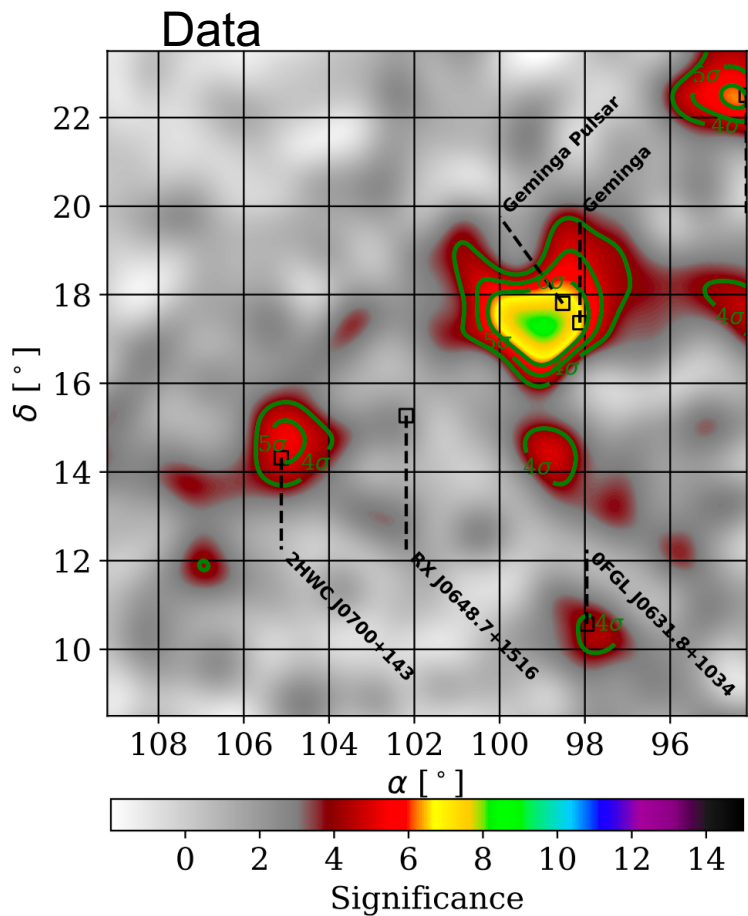
Geminga single fit

psf = 0.5



Diffusion radius: 7.6 ± 2.1 degree

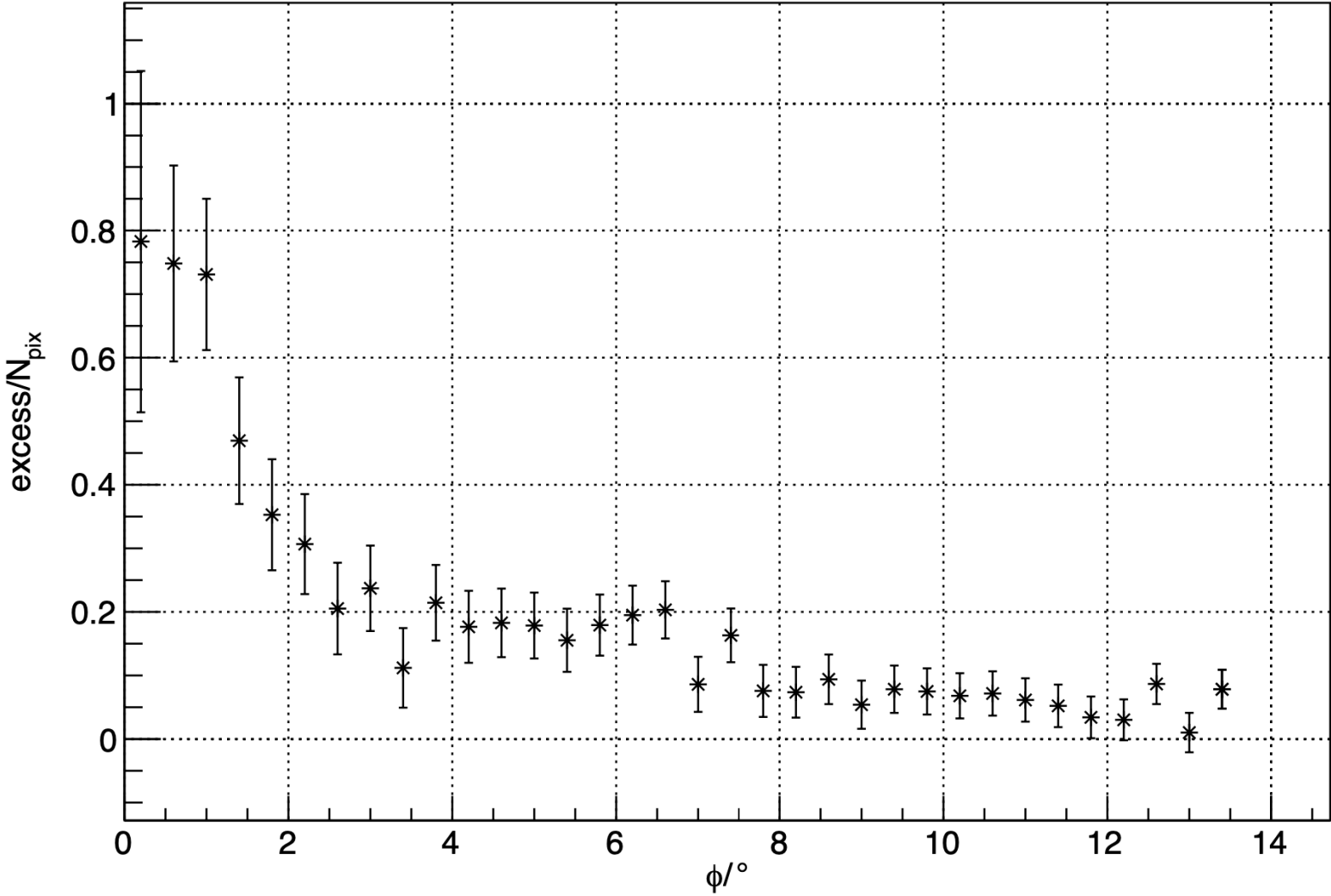
Geminga and monogem linked fit: psf = 0.5



Diffusion radius:

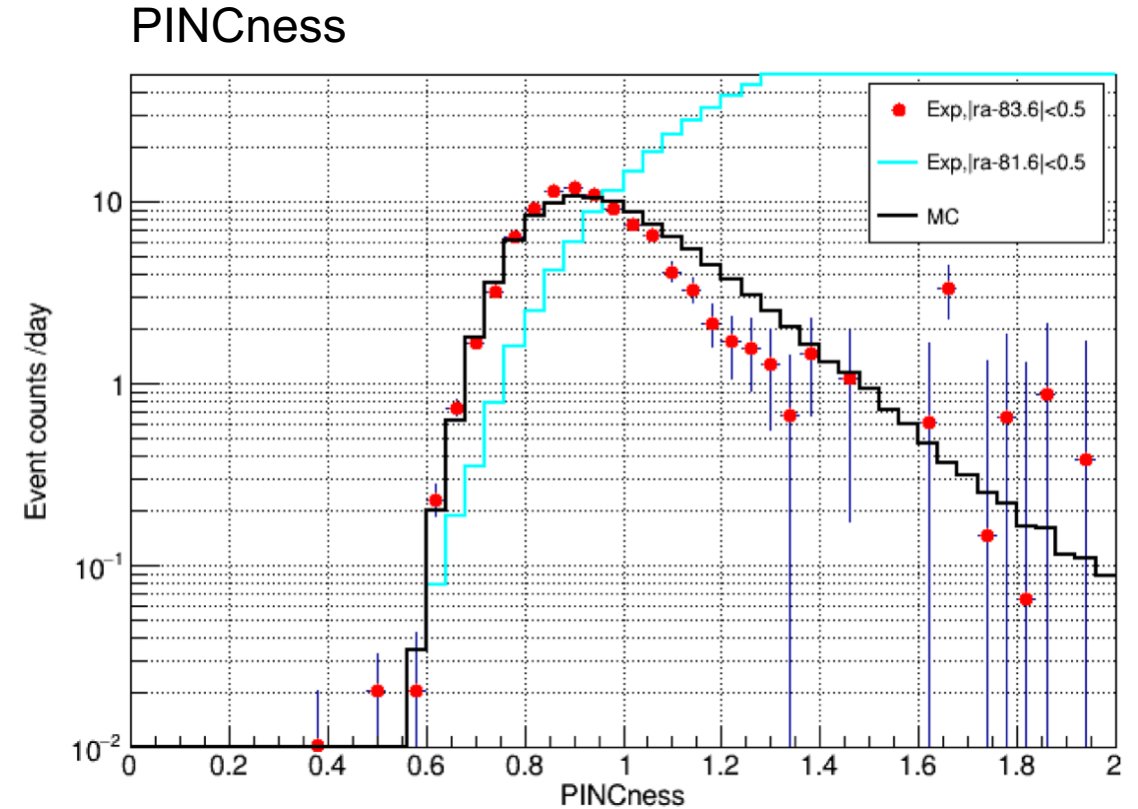
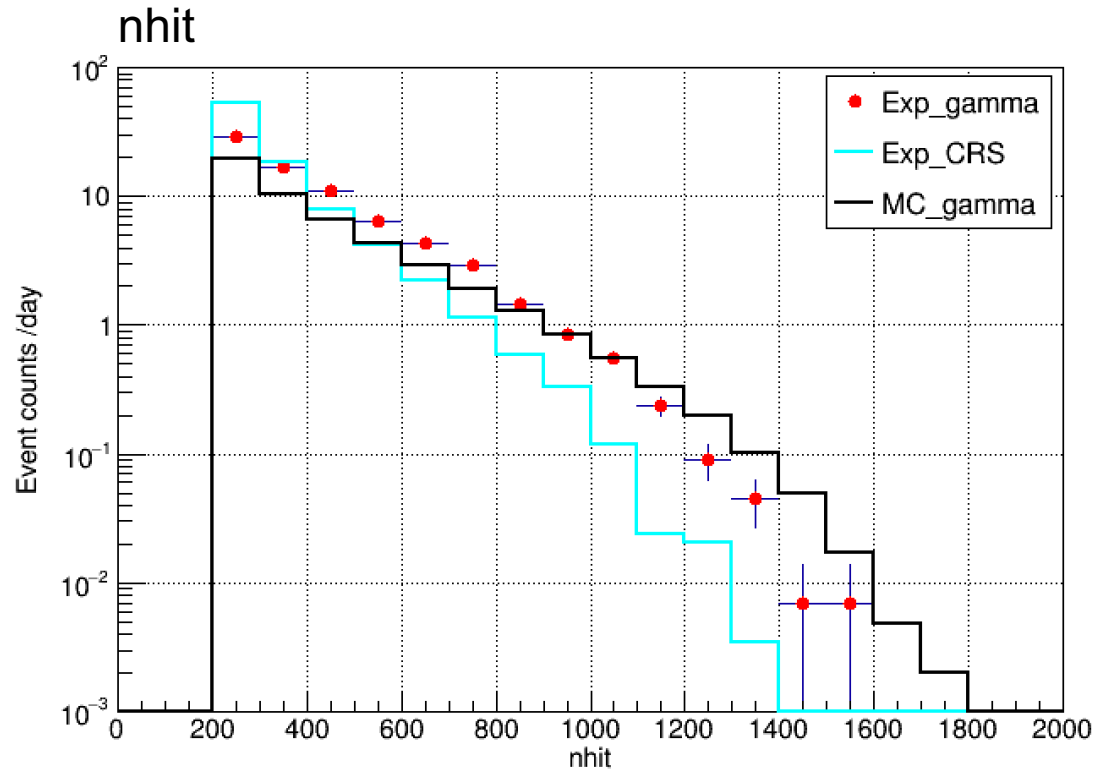
Geminga 8.9 ± 1.4 degree
Monogem 7.6 ± 1.2 degree

Excess events distribution of Geminga:



For detector response calculation :

MC results:

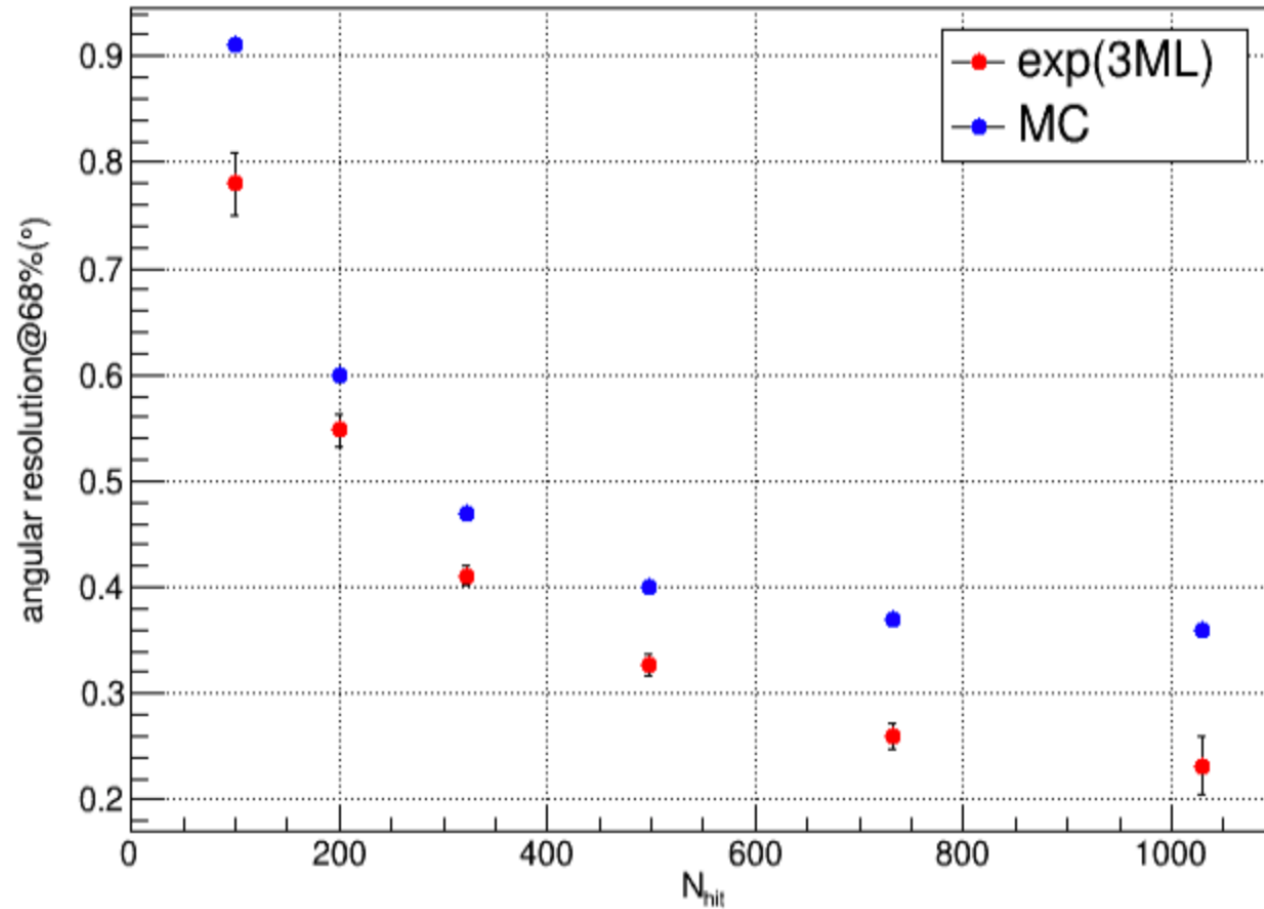


1. Nhith distribution of experiment data is softer than that of MC data.

1. The proportion of PINCness > 1 on MC data is bigger than that on experiment data.

MC results:

Angular resolution:



The angular resolution of Exp. data is better than that of MC. Um, **INTERESTING!**

Conclusion

- The significance of Geminga is about 6 sigma, similar to HAWC's result.
- 3ML module has been adopted in the analysis on Geminga(TeV Halo).
- There are still some discrepancies between the distributions of MC data and Exp. data.

psf = 0.25

