



Analysis of WIMP Annihilation at the Galactic Center

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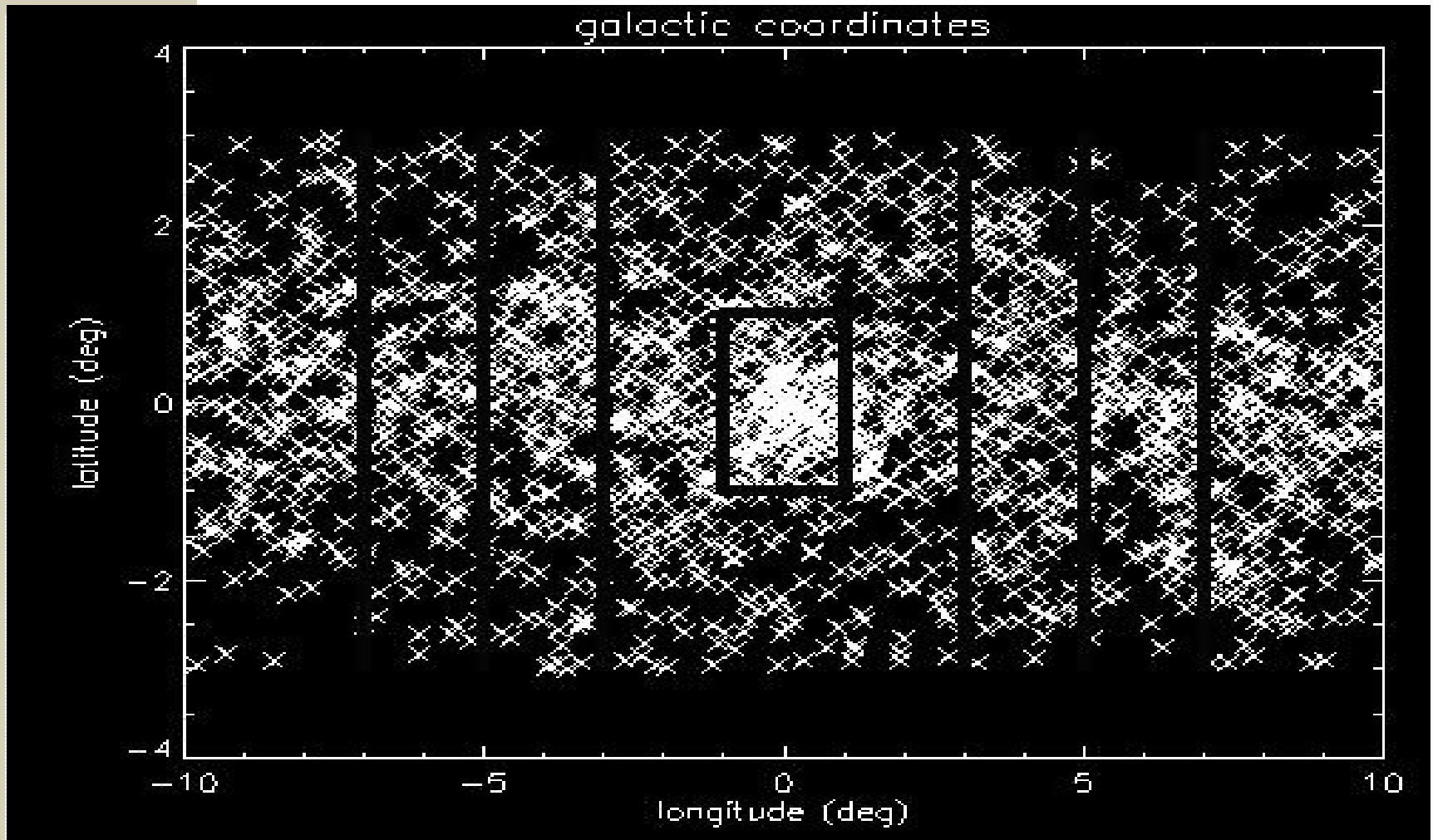


Strategy

1. Perform complete search for dark matter using EGRET data
2. Develop software interfaces which allow easy substitution of GLAST data and detector response



EGRET events from GC ($E > 2\text{GeV}$)

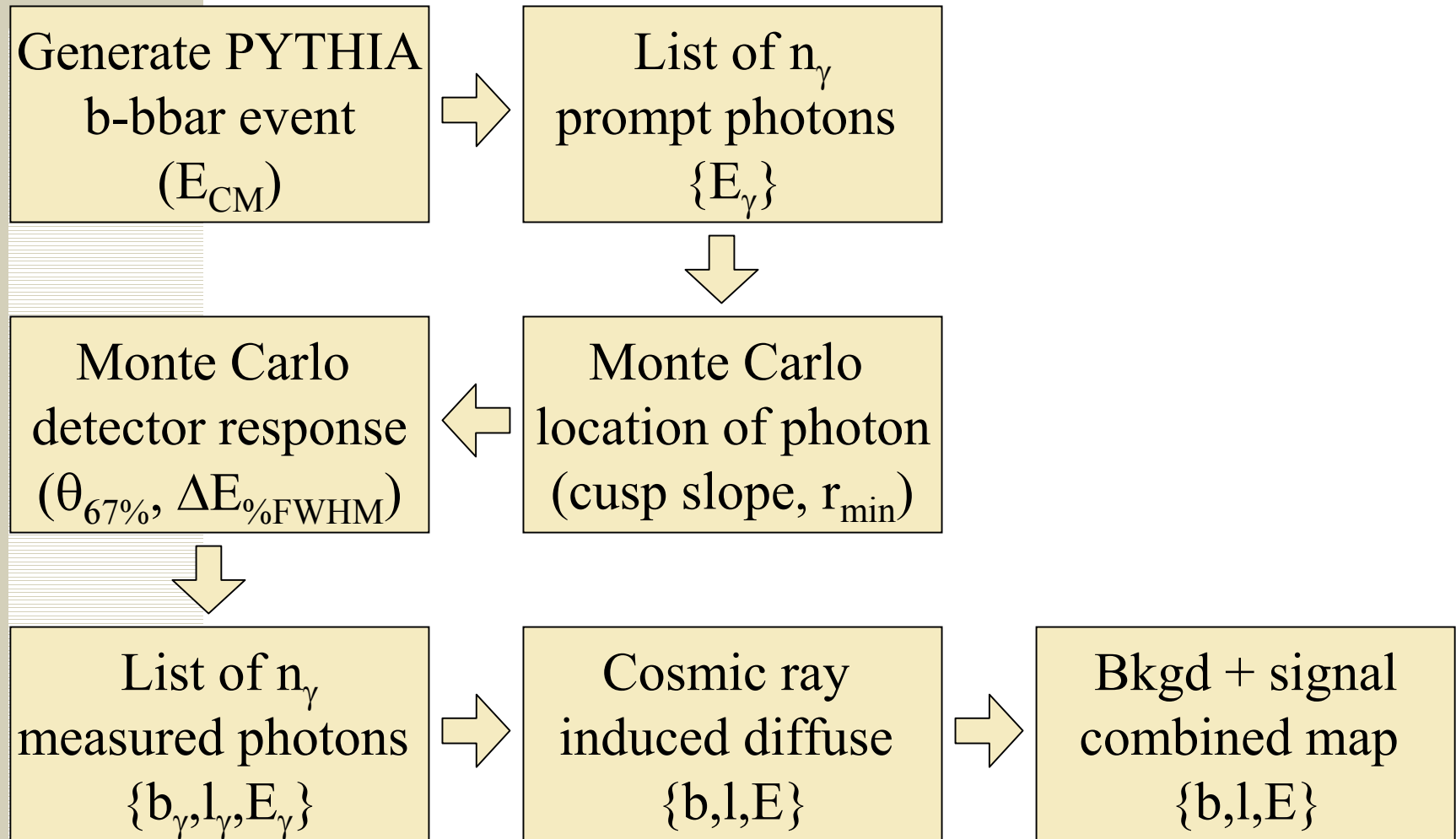




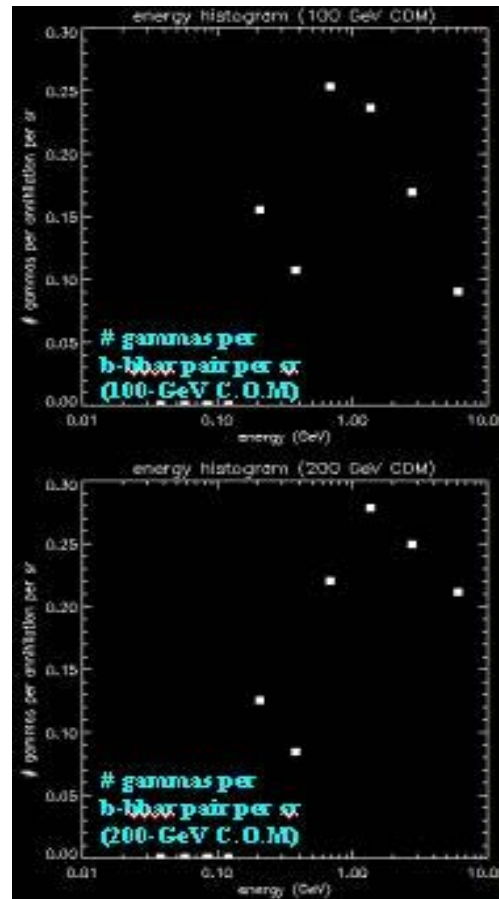
Analysis topics

1. Variability of measured flux
2. Estimate of cosmic ray induced gamma rays in central molecular zone
3. Multi-frequency analysis
 - a. Pulsar counterpart matching -potential background
 - b. Counterpart matching from radio –expect electron synchrotron radiation from WIMP annihilation

Prompt photon analysis chain



PYTHIA gammas from b-bbar decay



Spectral ratios

$0 < \theta < 1^\circ$

$1^\circ < \theta < 3^\circ$

$3^\circ < \theta < 5^\circ$

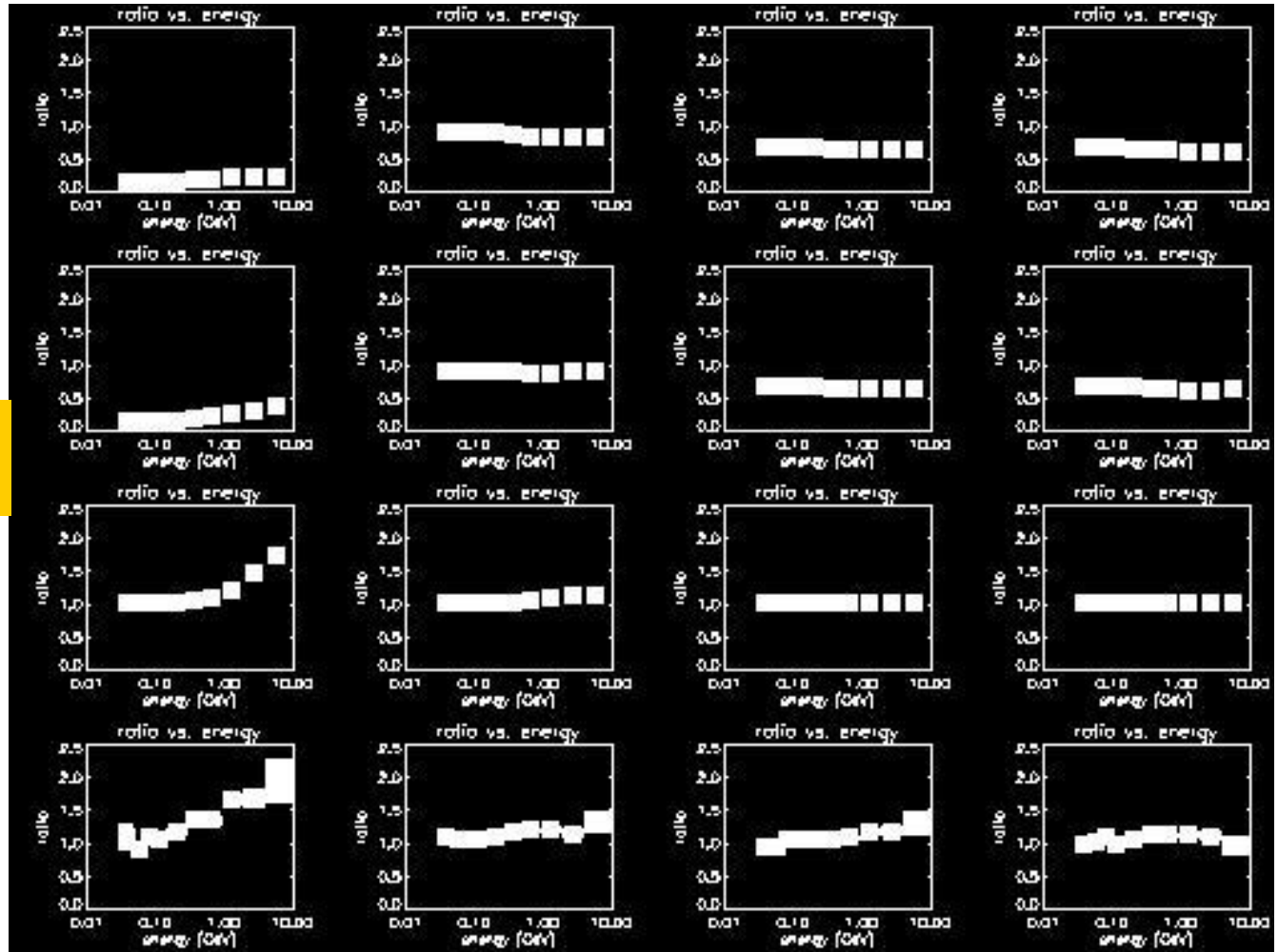
$5^\circ < \theta < 7^\circ$

R_{Diffuse}

$R_{\text{diffuse+DM}}$

$R_{\text{diffuse+DM}} / R_{\text{Diffuse}}$

$R_{\text{REGRET Data}} / R_{\text{Diffuse}}$



$\Omega_\chi = 0.2$, $M_\chi = 50\text{-GeV}$
Moore N-body profile