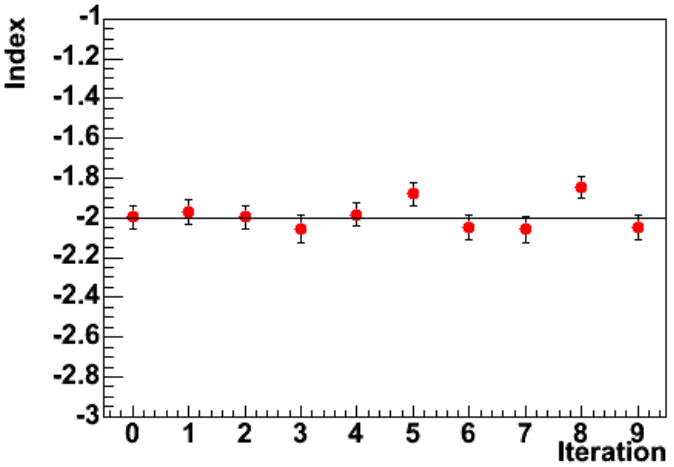
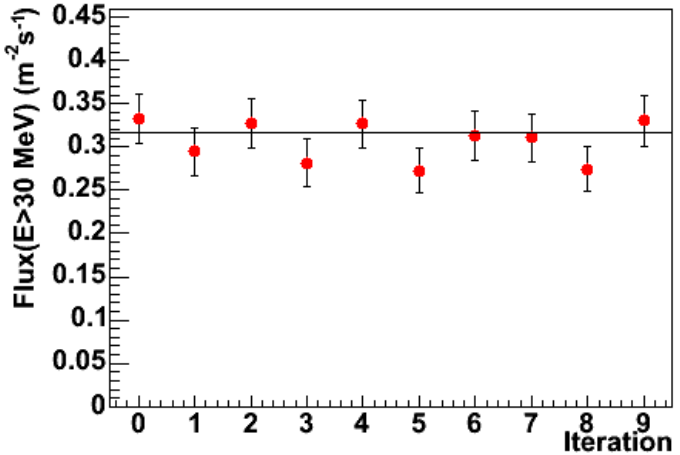
LAT performance: spectral and flux resolutions

Simulation/analysis with SAE tools
Galactic+Extragalactic diffuse background+ a single steady (known) source with a power-law spectrum:
b, l: galactic coordinates
F: flux above (E>30MeV)
α: power-law index
ΔT: integration time
N iterations with different Monte-Carlo seed values (N=10 in the following)

Example: b=l=60 deg
F=0.316 $m^{-2}s^{-1}$
α=2.0
ΔT=3h (2 orbits)





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b (deg)	l (deg)	ΔT (h)	F_{input} *	$\langle F_{output} \rangle$ *	$\langle \sigma_F \rangle$ *(1)	σ_F *(2)	α_{input}	$\langle \alpha_{output} \rangle$	$\langle \sigma_\alpha \rangle$ (1)	σ_α (2)
60	60	3	0.1	0.108	0.019	0.021	-2	-2.06	0.12	0.12
60	60	30	0.1	0.1007	0.006	0.009	-2	-2.01	0.04	0.04
60	60	3	1	0.99	0.047	0.050	-2	-2.003	0.034	0.037
60	60	30	1	1.006	0.017	0.019	-2	-2.003	0.011	0.006
30	60	3	0.1	0.108	0.020	0.020	-2	-2.06	0.13	0.11
60	60	3	0.1	0.103	0.020	0.025	-2.3	-2.33	0.17	0.13
10	60	3	0.1	0.109	0.024	0.024	-2	-2.08	0.15	0.17
60	60	3	0.316	0.306	0.028	0.024	-2	-1.99	0.06	0.07
60	60	3	0.1	0.105	0.016	0.017	-1.7	-1.73	0.08	0.06
60	60	3	0.0316	0.042	0.014	0.010	-2	-2.15	0.24	0.29

*: Flux above 30 MeV ($m^{-2}s^{-1}$)

(1): average uncertainty returned by the fit optimizer (MINUIT)

(2): uncertainty estimated from the distribution standard deviation