

IceCube Fast-Response Analysis Report

For Internal Use Only

Source Name:

Fast Response Example

Observation Date(s):

2017-01-01 – 2017-01-02

Report Generated On:

2020-08-20

1 Inputs

1.1 Source Information

Source Name	Fast Response Example
Trigger Time	2017-01-02 00:00:00.000 (MJD=57755.000000)
Start Time	2017-01-01 12:00:00.000 (Trigger-43200.0s)
Stop Time	2017-01-02 12:00:00.000 (Trigger+43200.0s)
Time Window	86400.0s

1.2 On-Time Data

Access Method	database
Stream	neutrino16
Query Time	2020-08-20 17:39:23
Start Time	2017-01-01 00:08:05
Stop Time	2017-01-03 00:08:48

1.3 Skylab Analysis Information

Skylab Version	2.7.2
IceTray Path	['/data/condor_builds/users/efried/icerec/build_realtime/lib/icecube/icetray']
Created by	i3home/efried
Dataset Used	gfu online/version-001-p01/
Dataset details	Real-time Gamma-Ray Follow-Up (GFU) Sample with leap second bug fix and official neutrino sources format.

2 Detector Operations

2.1 Run Times

Run	Start Time	Stop Time	Duration	Livetime
129004	2017-01-01 00:08:05	2017-01-01 08:07:31	7:59:26	0.0s
129005	2017-01-01 08:07:31	2017-01-01 16:07:42	8:00:11	14862.0s
129006	2017-01-01 16:07:42	2017-01-02 00:07:57	8:00:14	28815.0s
129007	2017-01-02 00:07:57	2017-01-02 08:08:11	8:00:14	28814.0s
129008	2017-01-02 08:09:17	2017-01-02 16:08:42	7:59:25	13843.0s
129009	2017-01-02 16:08:42	2017-01-03 00:08:48	8:00:05	0.0s

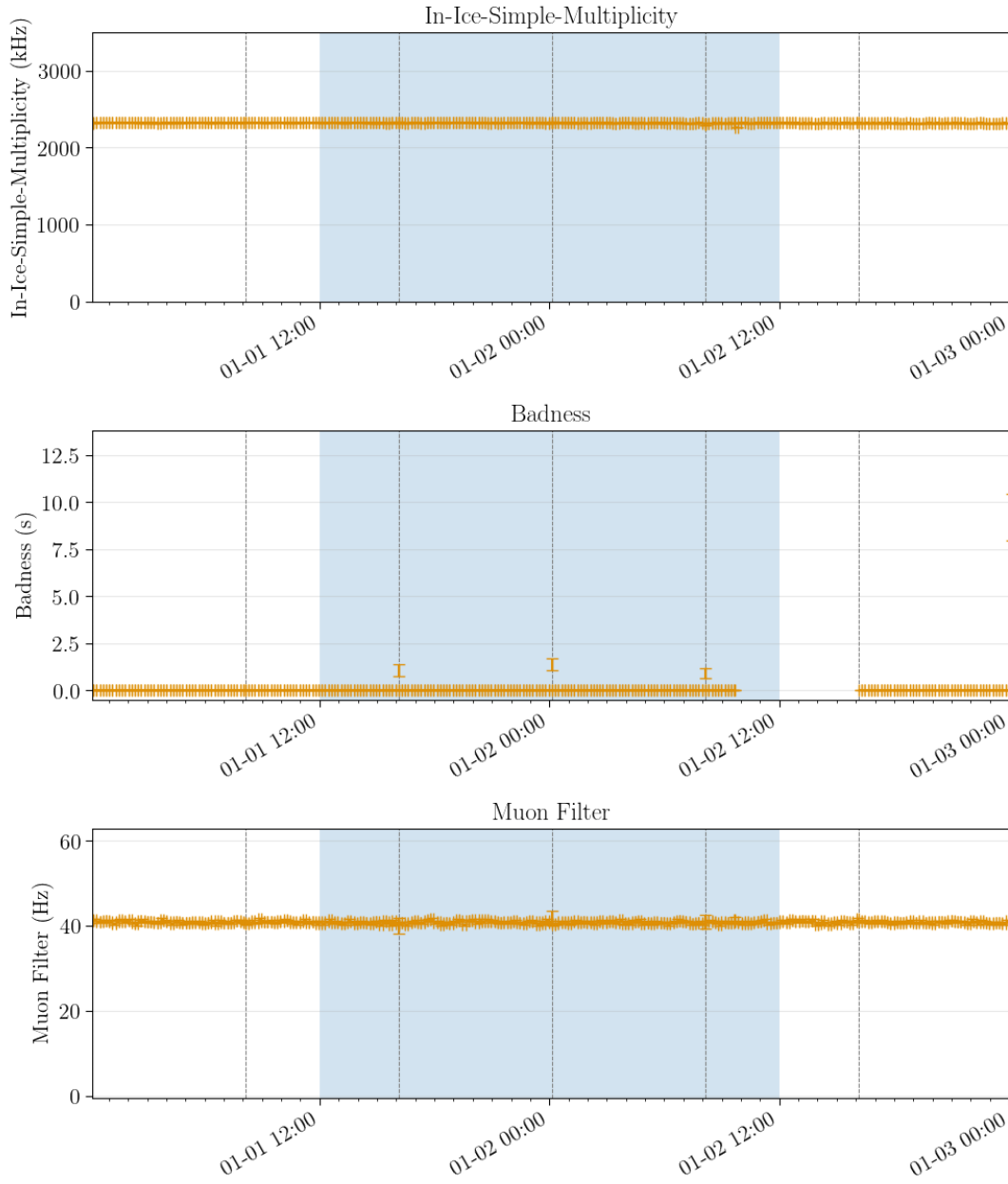
Total Livetime = 86,334.0 s

2.2 Run Status

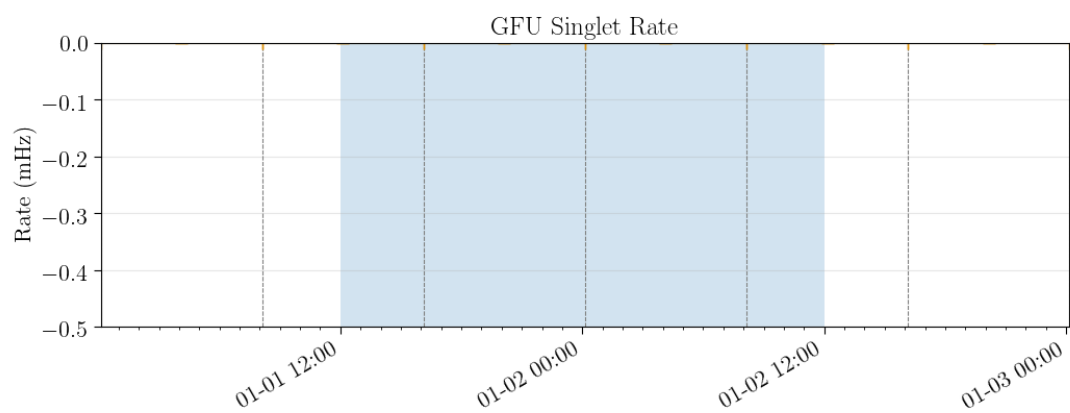
Run	Status	Light	Filter Mode	Run Mode	OK	GFU
129004	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0
129005	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0
129006	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0
129007	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0
129008	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0
129009	SUCCESS	dark	PhysicsFiltering	PhysicsTrig	OK	0.0

2.3 Event Rates

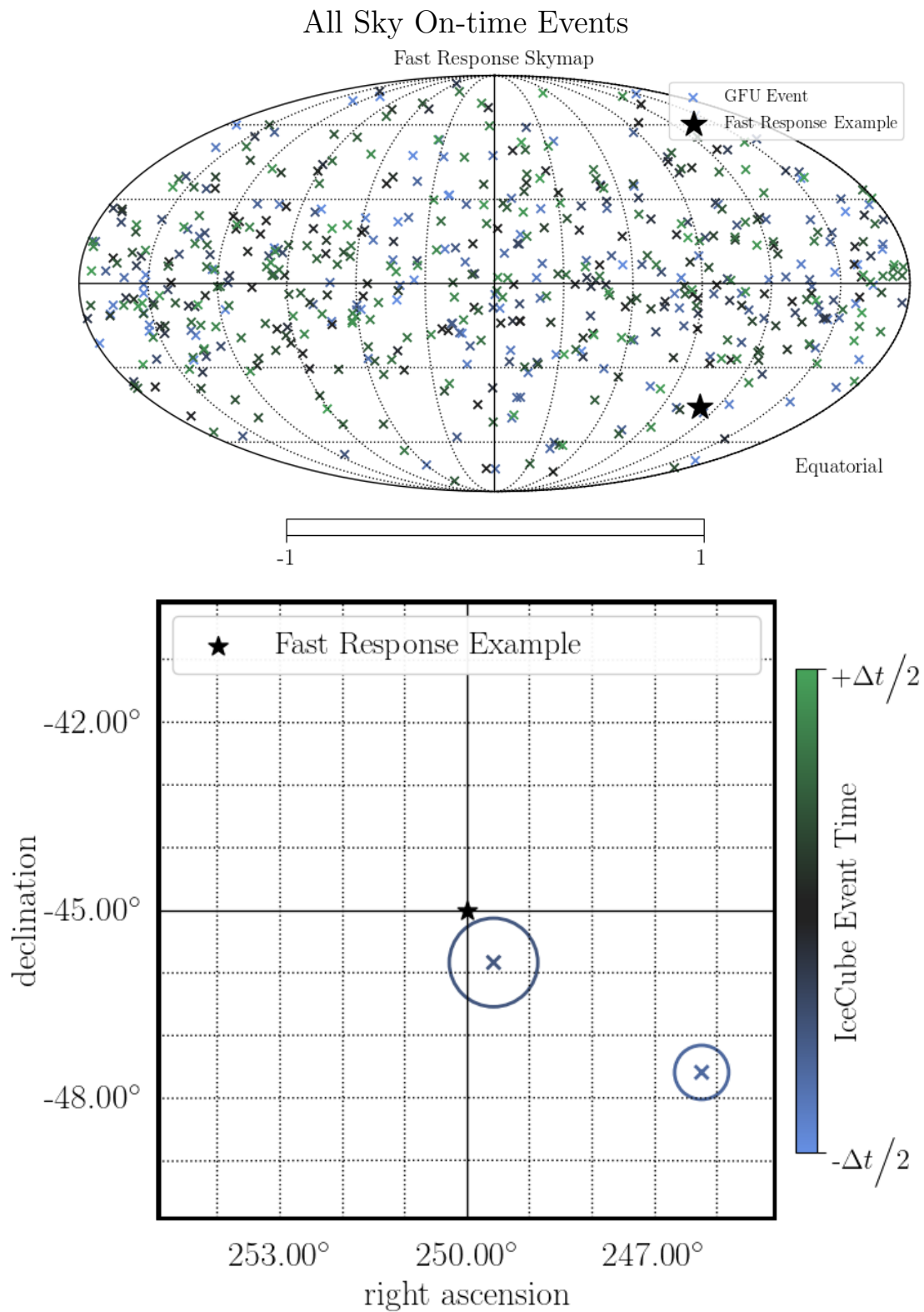
Plots for key trigger and filter rates for the data period and the neighboring runs. Blue indicates selected time window. Badness > 10s may indicate a problem.



/data/condor_builds/users/efried/FastResponseAnalysis/trunk/2017_01_01_Fast_Response_Example/OnlineL2Fi



3 Results



3.1 Coincident Events

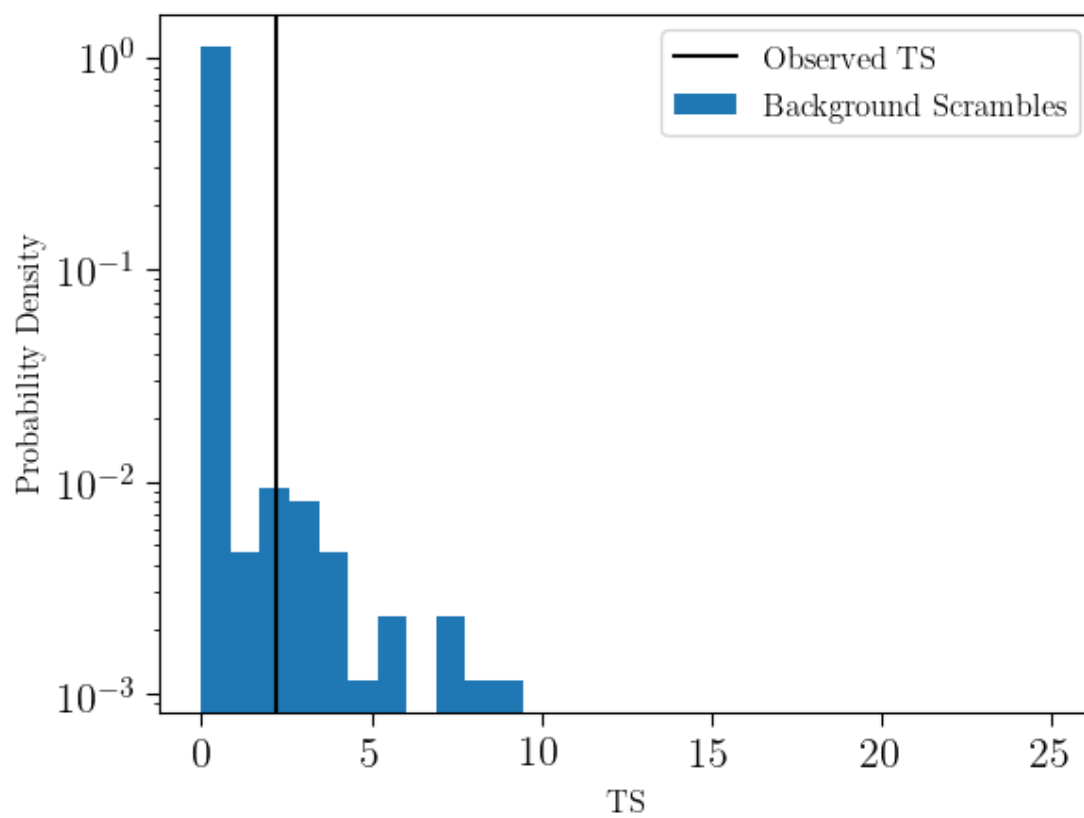
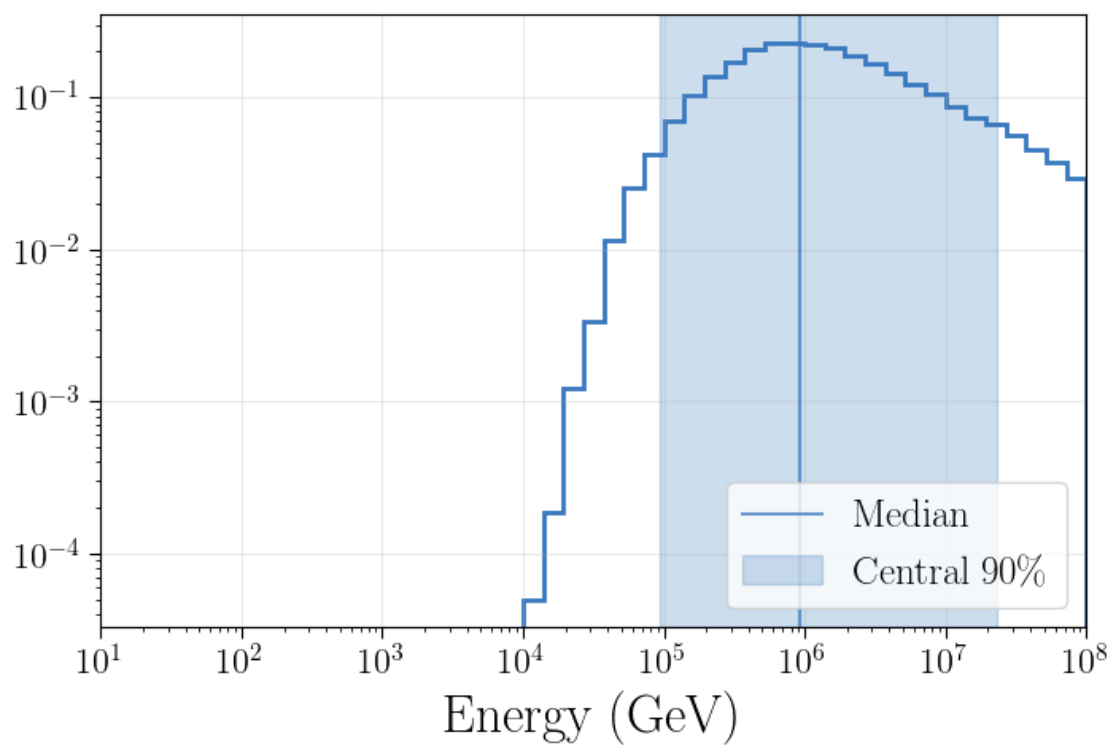
For point sources, any events from the relevant time window with a spatial times energy weight greater than 10 is included in this table. For skymaps, any event reconstructed within the 90% contour is included (for longer timescale cascades we skip this because of the large localization).

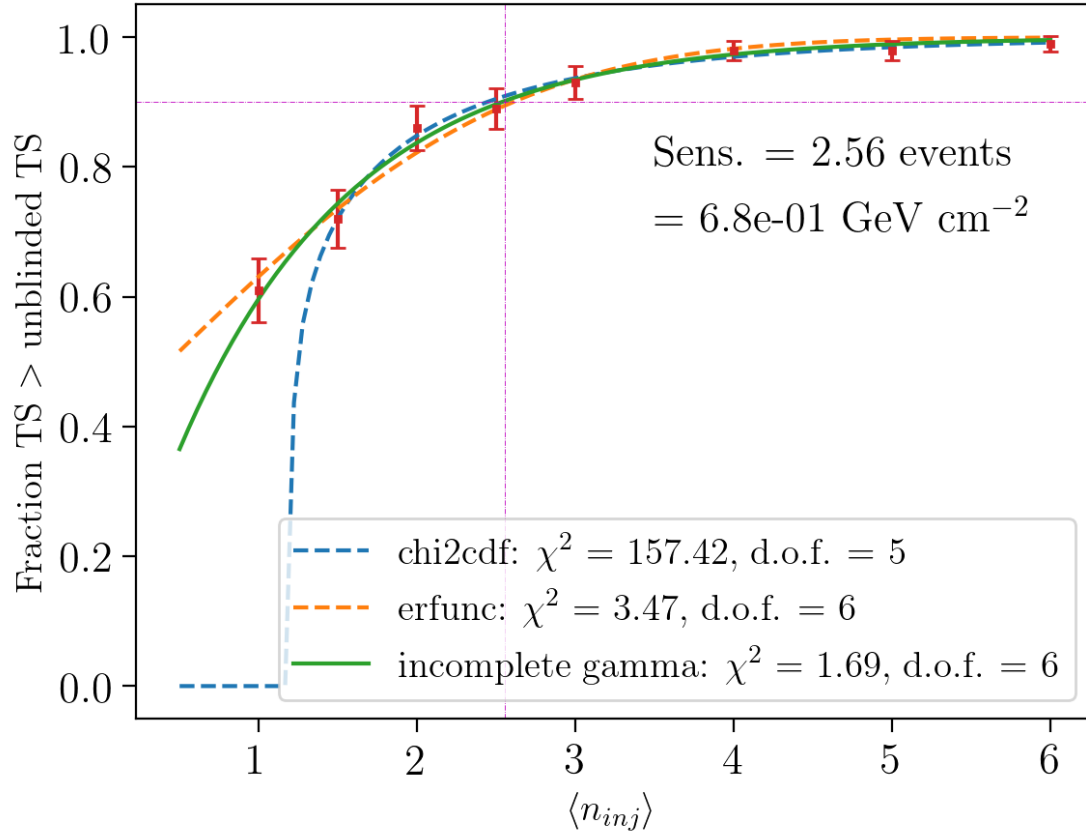
Run:Event	129006:19236235
Time	57754.74787590005
α, δ	249.38°, -45.84°
Angular Uncertainty (90%)	0.70°
Distance from Source	0.94°
Reconstructed Energy (GeV)	3.34e+05
Spatial Weight	1760.04
Energy Weight	2.38

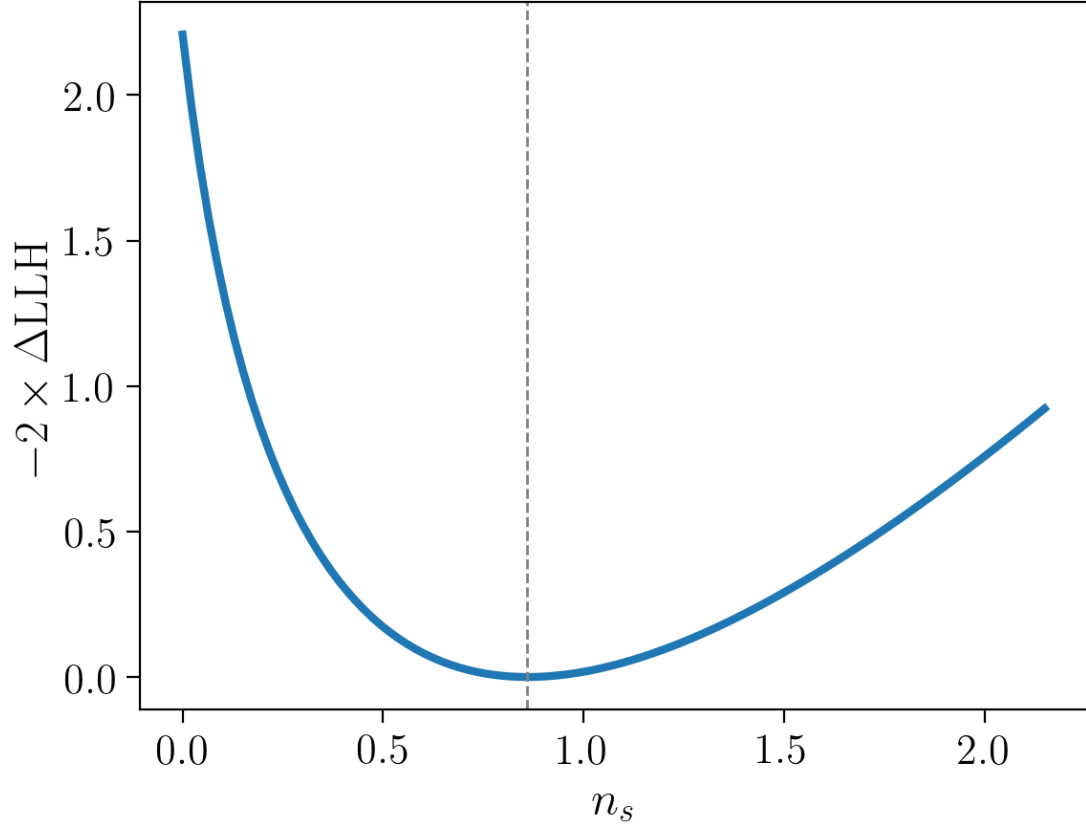
3.2 Likelihood Analysis

n_s	0.860
TS	2.208
$p - value$	0.0240

Limit dN/dE







These plots are meant as validations of the minimizer, and cannot be interpreted directly using Wilk's assuming one degree of freedom because the low statistics invalidates the asymptotic condition for Wilk's theorem.