

Comparison of statistical scanning methods with ScannerBit: a GAMBIT module for parameter scanning

GAMBIT Scanner Working Group

January 9, 2015

Abstract

blah

1 Introduction

Context of GAMBIT

2 Background

2.1 Statistics

brief background on frequentist profile likelihood and bayesian methods

2.2 Scanning methods

background on scanning methods in global fits (mastercode, superbayes, fittino, cosmomc, etc)

3 Package description

general, including description of "purposes"

3.1 Scanner plugins

including plugin design and handles for interface with ScannerBit + interface to external libs (cmake + python system)

3.2 Target plugins

4 Implemented Scanners

4.1 Toy scanners: toy_mcmc, random, grid

4.2 Nested sampling

4.3 Differential evolution

4.4 T-walk

5 Scanner comparison and examples

- test target function performance of each scanner
- implementation examples in gambit and standalone

6 Conclusions

7 Acknowledgements

A Input file options

B Dependencies