

# GAMBIT Documentation

Ross Clark (Summer Student)  
Supervised by Dr Andy Buckley  
Experimental Particle Physics Group, University of Glasgow  
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- Home
- Results & Publications
- Talks
- Community
- Download
- Source Code
- Support
  - Tutorials
  - FAQ
  - Compiler matrix
  - Known issues
  - Documentation
  - Configuration examples
  - Report issue
- Users' mailing list
- Contact
- Internal pages:
  - Wiki
  - Git repos:
    - gambit (dev fork)
    - gambit\_internal
    - gambit\_results



## GAMBIT

### Tutorials

This is a place where we will place tutorials. In order to place something here, please take the tutorial tutorial (under construction).

#### MC4BSM, April 2018

Tutorial given by Andy Buckley at the MC4BSM 2018 workshop, April 2018. [Link to materials](#). Uses Docker image from `docker pull gambitbsm/gambit-tutorial`

#### Dartmouth-TRIUMF HEP/Cosmo tools bootcamp

Tutorial given by Anders Kvellestad and Jonathan Cornell at the Dartmouth-TRIUMF HEP/Cosmo tools bootcamp 26.10.17.

Files:

- Slides part 1
- Slides part 2
- Installation\_before\_tutorial.txt
- tutorial\_commands.txt
- WC\_lite.yaml
- WC\_lite.pip

- Home
- Results & Publications
- Talks

**GAMBIT**

- ▶ ScannerBit
- ▶ Deprecated List
- ▶ Namespaces
- ▶ Classes
- ▶ Files
- ▶ Examples

# GAMBIT v1.5.0-2191-ga4742ac

a Global And Modular Bsm Inference Tool

Main Page Related Pages Namespaces ▾ Classes ▾ Files ▾ Examples

gambit is hosted by Hepforge, IPPP Durham

## GAMBIT Documentation

GAMBIT is a global fitting code for general definition of new models, observables, ...

The Bits of Gambit:

- ScannerBit
- ColliderBit
- DarkBit
- SpecBit
- PrecisionBit
- FlavorBit
- DecayBit
- CosmoBit
- NeutrinoBit

Gambit Tools:

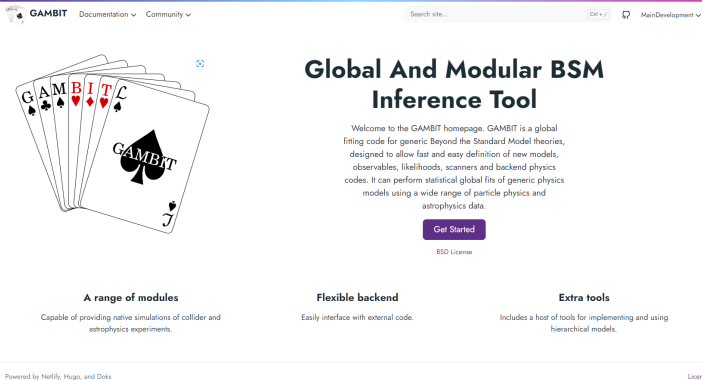
- pippi
- GUM
- Models

collider\_event\_we  
COLLIDER\_FINAL  
collider\_harvester  
collider\_harvester  
COLLIDER\_INIT\_G  
COLLIDER\_INIT\_C  
collider\_names G  
COLLIDERBIT\_DE  
ColliderBit\_dumm  
ColliderBit\_eventi

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- Talks
- Community
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- Build a new, **modern website** to replace one hosted on Hepforge
- Produce improved, easily maintainable **auto-generated documentation** via Doxygen/Sphinx
- Write practical **onboarding guides** for new users
- Ensure that new system is **easy to maintain and expand**


- Hosted on **GitHub Pages** using **Hugo** and the **Doks** theme
- All pages rendered from **markdown files**



The screenshot shows the homepage of the GAMBIT project. At the top, there is a navigation bar with the GAMBIT logo, links for 'Documentation' and 'Community', a search bar, and a 'MainDevelopment' dropdown. The main content area features a large image of playing cards spelling out 'GAMBIT' and a 'J' on the Jack of Spades. Below this is the title 'Global And Modular BSM Inference Tool' and a welcome message. A 'Get Started' button is prominently displayed, with a link to the 'BSD License' below it. Three columns of text describe the project's features: 'A range of modules', 'Flexible backend', and 'Extra tools'. The footer contains the text 'Powered by Netlify, Hugo, and Doks' and a 'License' link.

**GAMBIT** Documentation ▾ Community ▾

Search site...



## Global And Modular BSM Inference Tool

Welcome to the GAMBIT homepage. GAMBIT is a global fitting code for generic Beyond the Standard Model theories, designed to allow fast and easy definition of new models, observables, likelihoods, scanners and backend physics codes. It can perform statistical global fits of generic physics models using a wide range of particle physics and astrophysics data.

[Get Started](#)

[BSD License](#)

**A range of modules**  
Capable of providing native simulations of collider and astrophysics experiments.

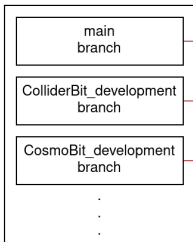
**Flexible backend**  
Easily interface with external code.

**Extra tools**  
Includes a host of tools for implementing and using hierarchical models.

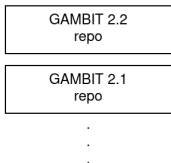
Powered by Netlify, Hugo, and Doks

[License](#)

## GAMBIT development repo



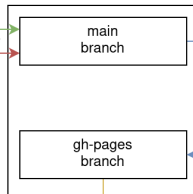
## GAMBIT release repos



User pushes  
guides/tutorials to website  
repo (site can also be  
tested locally)

*.md files*

## GAMBIT website repo



GitHub workflow builds  
site and pushes to  
deployment branch


*.html etc*

GitHub workflow  
generates documentation  
and pushes to website  
repo

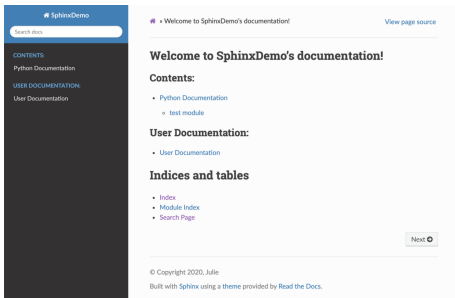
Automatic GitHub  
workflow deploys site to  
GitHub pages

Site appears  
somewhere on the  
internet!

## My Project



The screenshot shows a Doxygen-generated web page for a project named 'My Project'. It features a navigation menu with 'Main Page', 'Classes', and 'Files'. Below the menu is a search bar and a table with 'Class List', 'Class Index', and 'Class Members'. The main content area displays 'Foo::Foo Class Reference' with a sub-header 'Public Types'. Under 'Public Types', there is an 'enum Foo' with the description 'Foo enum, possible ways to foo.'. Below this, it states 'The documentation for this class was generated from the following file:' followed by a list containing 'Foo.h'. At the bottom, it says 'Generated on Thu Dec 6 2012 15:38:12 for My Project by doxygen 1.8.2'.



The screenshot shows a Sphinx-generated web page for a project named 'SphinxDemo'. It features a search bar at the top. Below the search bar is a 'CONTENTS' section with a tree view: 'Python Documentation', 'USER DOCUMENTATION:', and 'User Documentation'. To the right, there is a 'Welcome to SphinxDemo's documentation!' message, followed by 'Contents:' and a list of items: 'Python Documentation' (with a sub-item 'test module') and 'User Documentation:'. Below that is an 'Indices and tables' section with a list: 'Index', 'Module Index', and 'Search Page'. At the bottom right, there is a 'Next' button. The footer contains copyright information: '© Copyright 2020, Julie' and 'Built with Sphinx using a theme provided by Read the Docs.'

Doxygen: only requires Doxygen

Sphinx: requires Doxygen, Sphinx,  
Breathe, Exhale

**Solution:** Doxygen with Doxybook2 to produce flexible markdown files

- Installation
- Basic examples (maybe for example ColliderBit and a few others)
- More advanced tutorials (for example HPC, postprocessing, extending GAMBIT code)
- Individual module reference pages



- GitHub repo
- Website

- Feedback!
- Code documentation conventions (docstrings, masking etc)
- Mechanics of website editing/maintaining
- Website manager / documentation enforcer
- All comments welcome!