

Core Working Group Updates

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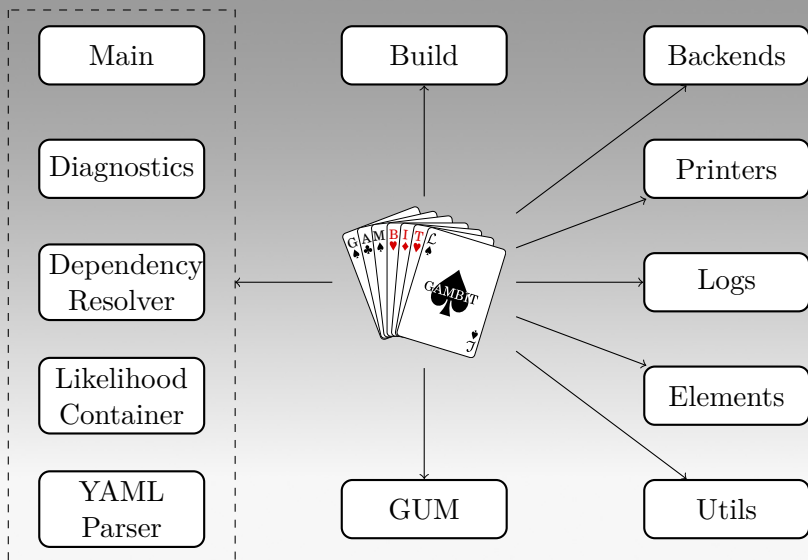
GAMBIT XIV

WG Members

- **Tomas Gonzalo (convenor)**
- **Markus Prim (convenor)**
- Anders Kvellestad
- Chris Chang
- Peter Athron
- *Pat Scott*
- *Patrick Stoecker*



What is Core?



Recent updates

GAMBIT (2.2)

- Support for Cosmo ALPs
- Redesign of FlavBit
- New backends: Acropolis 1.2.1, HepLike 1.2
- Updated backends: MontePython 3.5, class 3.1, SuperISO 4.1
- Updated scanners: Polychord 1.18.2
- **Full support of Clang and AppleClang**
- Updates to GUM
- Updates to BOSS
- Bugfixes++

Unresolved PRs

Core only

- *Yaml metadata in samples* TG
- Defining and Enforcing a Code Style MP
- Make diagnostic system aware of un-compiled modules MP
- Patch to the `yaml_node_utility` made by Andy TP
- Cmake system for downloading datasets AK, TG, CC
- Vevacious dependencies AF, TG, AK, PS

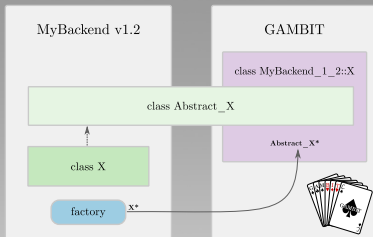
Other

- Two Higgs Double Models TG, PS, MW, AW
- *Simplified DM Models* CC, AK, TG
- Cmake scan fix GM, AK
- Multinest fix WH, AK
- *Update terminology* AF, AV

Major Core projects

Template BOSS AK, TG

- Backend C++ codes
- Not working if X is templated
- Jan 2022: Pawsey interns
Zelun Li & Joel West
- Finished as of July 2022 (?)
- Generic templates
Specialized templates
- Abstract classes
- Wrapper classes
- GAMBIT typedefs



```

template <T> class X
template<> class X<int>
    Abstract_X<T>
    Abstract_X<int>
    MyBackend_1_2::X__int
    MyBackend_default::X__int
    MyBackend_1_2::X<int>
    MyBackend_default::X<int>
  
```

Major Core projects

SpecBit redesign

- Joint Models + Core project
- Need Template BOSS
- Most things ported to use new `Spectrum` class
- Only missing functionality is running spectrum

PA, TG, BF

HDF5 Printer

- HDF5 v2 not working on some systems
- Help from Pawsey to resolve

PP

Fast-slow scanners

- Joint Scanner + Core project
- Needs kickoff meeting

GM, WH, TG?

Major Core projects

GAMBIT 2

- Any non-documented code since GAMBIT 1
- Big Core changes
 - Python backends
 - Template BOSS
 - Dependency resolution changes: subcaps
 - Citation system
 - New printers
- Undocumented module development
 - SpecBit redesign
 - FlavBit redesign (undocumented)
 - ColliderBit redesign (CBS?)
- Full list of expected items in draft