

# HEPfit: The Analysis Toolkit

*Saturday, 7 July 2018 11:45 (15 minutes)*

HEPfit is a computational tool for the combination of indirect and direct constraints on High Energy Physics models. The code is built in a modular structure so that one can select observables and models of interest. It can be used to build customized models and customized observables. It has a statistical framework based on Markov Chain Monte Carlo (MCMC) driven Bayesian analysis. However, any statistical framework can be used as an option. The goal of HEPfit is to implement electroweak, Higgs and flavour physics observables to the highest degree of precision with minimum theoretical assumptions built in. This has been done in the Standard Model and in several models beyond the Standard Model, such as MSSM, THDM, L-R symmetric models, and several EFTs. Since the statistical treatment in HEPfit is based on MCMC, optimized computational time is of utmost importance, HEPfit is massively parallelized to run over a large number of CPUs using openMPI.

**Primary authors:** HEPFIT COLLABORATION; PAUL, Ayan (INFN, Sezione di Roma); EBERHARDT, Otto (Istituto Nazionale di Fisica Nucleare)

**Presenter:** EBERHARDT, Otto (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Computing and Data Handling

**Track Classification:** Computing and Data Handling