

Python-based Hierarchical Configuration of LHCb Applications

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The LHCb software, from simulation to user analysis, is based on the framework Gaudi. The extreme flexibility that the framework provides, through its component model and the system of plug-ins, allows us to define a specific application as its behavior more than its code. The application is then described by some configuration files read by the bootstrap executable (shared by all applications). Because of the modularity of the components we have and the complexity of a typical application, the basic configuration of an application can be a challenging task, made more difficult by the need of the possibility, for user and developers, to tune such configuration. In the last year, to simplify the task, we changed the way we configure applications from static text files to Python scripts. Thanks to the power of Python, we designed an object-oriented hierarchical configuration framework, on top of the initial implementation by Atlas collaboration, where the applications are defined as high level configuration entities that use other entities representing the various configuration subsystems or contexts, thus hiding the complexity of the low level configuration from the user.

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