

Readable and efficient HEP data analysis with bamboo

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With the LHC continuing to collect more data and experimental analyses becoming increasingly complex, tools to efficiently develop and execute these analyses are essential. The bamboo framework defines a domain-specific language, embedded in python, that allows to concisely express the analysis logic in a functional style. The implementation based on ROOT's RDataFrame and cling C++ JIT compiler approaches the performance of dedicated native code. Bamboo is currently being used for several CMS Run 2 analyses that rely on the NanoAOD data format, which will become more common in Run 3 and beyond, and for which many reusable components are included, but it provides many possibilities for customisation, which allow for straightforward adaptation to other formats and workflows.

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