

Pepper: a framework for columnar data analysis in CMS

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We present Pepper, a general purpose framework for CMS data analysis developed at DESY. This is a python-based framework using columnar processing and the scikit-hep ecosystem of libraries, notably awkward and coffea. This approach offers processing speeds comparable to C++ frameworks, while being more approachable for recent graduates with experience of numpy and similar tools. Pepper extends on its base packages by offering helper classes and functions, a simple configuration interface, working examples for simple analyses and easily extensible code. The framework has been used in approximately 5 published analyses, with about 15 further analyses in progress, mostly at DESY. We will discuss lessons learnt from developing this framework, as well as challenges from an analysis and computing perspective.

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