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## A Faster, More Accessible RooFit

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RooFit and RooStats, the toolkits for statistical modelling in ROOT, are used in most searches and measurements at the Large Hadron Collider, as well as B factories. The large datasets to be collected in Run 3 will enable measurements with higher precision, but will require faster data processing to keep fitting times stable. In this talk, a redesign of RooFit's internal dataflow will be presented. Cache locality and data loading are improved, and batches of data are processed with vectorised SIMD computations. This improves RooFit's single-thread performance by several orders. In conjunction with multiple workers, this will allow to fit the larger datasets of Run 3 in the same time or faster than today's fits.

RooFit's interfaces will further be extended to be more accessible both from C++ and Python to improve interoperability and ease of use.

### Consider for promotion

No

**Primary author:** HAGEBOECK, Stephan (CERN)

**Presenter:** HAGEBOECK, Stephan (CERN)

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