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Kotlin - new language for scientific programming

One of the problems of scientific software development is lack of proper language tools to do it conveniently. Among the modern languages only few are able (have flexibility and most importantly libraries) to handle scientific tasks: C++, Python and Java. Also in some cases some niche languages like C# or Julia could be used.

The major problem of C++ is the complexity of the language and tremendous skill requirement to use it properly. Languages like Python and Julia remedy the problem of complexity, but as dynamic languages could not be used in large projects or performance critical tasks.

The Kotlin is a new language, developed by famous JetBrains company is fully compatible with Java and therefore has access to a large variety of scientific libraries. It is much less verbatim than Java which allows to write programs easier, also it addresses most of Java problems. What is more important, that Kotlin now has cross-platform support, which means that JVM, JS and native programs could be written in the same language.

In this report, we present some examples of using Kotlin language for simulation and data processing tasks in particle physics.

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