

## Can 'Go' address the multicore issues of today and the manycore problems of tomorrow ?

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Current HENP libraries and frameworks were written before multicore systems became widely deployed and used.

From this environment, a 'single-thread' processing model naturally emerged but the implicit assumptions it encouraged are greatly impairing our abilities to scale in a multicore/manycore world.

While parallel programming - still in an intensive phase of R&D despite the 30+ years of literature on the subject - is an obvious topic to consider, other issues (build scalability, code clarity, code deployment and ease of coding) are worth investigating when preparing for the manycore era.

Moreover, if one wants to use another language than C++, a language better prepared and tailored for expressing concurrency, one also needs to ensure a good and easy reuse of already field-proven libraries.

We present the work resulting from such investigations applied to the 'Go' programming language.

We first introduce the concurrent programming facilities 'Go' is providing and how its module system addresses the build scalability and dependency hell issues.

We then describe the process of leveraging the many (wo)man-years put into scientific Fortran/C/C++ libraries and making them available to the Go ecosystem.

The ROOT data analysis framework, the C-BLAS library and the Herwig-6 MonteCarlo generator will be taken as examples.

Finally, performances of a small analysis written in Go and using Fortran and C++ libraries will be discussed.

references:

Go: <http://golang.org>

ROOT: <http://root.cern.ch>

C-BLAS: <http://www.netlib.org/clapack/cblas/>

Herwig-6: <http://hepwww.rl.ac.uk/theory/seymour/herwig/>

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