Optimizing ROOT's Performance Using C++ Modules

Dr. Vassil Vassilev
(presented by Philippe Canal)
10.10.2016

Vassil’s work is entirely sponsored by USCMS and FNAL.
Optimizing ROOT's Performance Using C++ Modules

Recompiling C++ gets faster using C++ Modules (ISO CPP Modules TS). ROOT is on its way to use benefit from the new technology, expecting:

- faster (re-)compilation by 20-30%.
- less memory use at runtime about 40%.
User/Experiments’ code has a lot of semantical equivalents to this. Forces ROOT’s interpreter to parse headers related to MyLib (even when we intend to use only tiny fraction of them). This results in increased memory.

C++ Modules-aware ROOT runtime will lazily allocate memory only for what you use and at the point of use! Everything unused is mmaped.