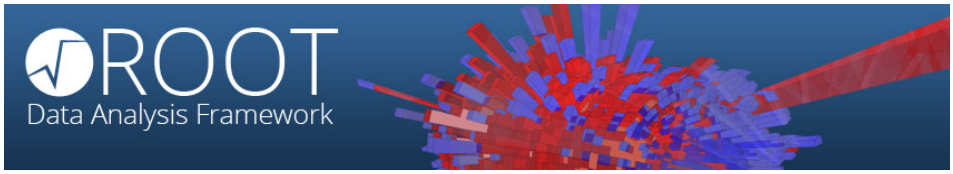


Contribution ID: **22** Type: **Presentation**

# Analyzing LHC experiment software in terms of obsolete memory utilization with a focus on ROOT objects

*Friday 18 September 2015 10:10 (20 minutes)*

The ROOT framework is used by all LHC experiments in particular for I/O and histogramming. For most of the experiments the memory footprint of their applications represents a major problem forcing them to go from single- to multicore jobs. However, initial benchmark tests have revealed that the main applications of many LHC experiments are able to run with lower memory footprint than what they normally allocate. One typical reason of excessive memory usage is that objects are kept longer in memory than their useful lifetime. In LHC experiment software it has been observed that some large amounts of memory are allocated and used in the initialization phase but not used again or not freed until the end of the process. A new tool (FOM for Find Obsolete Memory) has been developed which helps to spot such unused allocated objects and to detect memory utilization patterns. This talk will explain the tool and show examples for obsolete memory in LHC experiment software with a focus on ROOT objects.

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**Session Classification:** Presentations

**Track Classification:** Presentations