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INVITED SPEAKER: Thomas Dietel (University of Cape Town) for the ALICE Experiment at the LHC

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Abstract content
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The ALICE Collaboration studies the Quark-Gluon Plasma, a new state of nuclear matter at extreme temperatures and densities which is created in high-energy collisions of heavy nuclei at CERN's Large Hadron Collider (LHC).

The LHC is one of the largest producers of scientific data, and the ALICE Experiment alone has collected more than 10 petabytes of data since 2010. The processing and analysis of this data requires online processing in the High-Level Trigger as well as offline processing using the Worldwide Large Computing Grid (WLCG). We will discuss the current computing strategy of ALICE and outline selected tools and methods used in the processing of this data volume.

Upgrades to the LHC and the ALICE apparatus scheduled for a long shutdown in 2019/20 will enable ALICE to inspect 100 times more collisions, requiring a rethinking and redesign of the ALICE computing model, including a tighter integration of online and offline computing and new software algorithms, communication protocols and system architecture.

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