

A proposal for Open Access data and tools multi-user deployment using ATLAS Open Data for Education

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The deployment of analysis pipelines has been tightly related and conditioned to the scientific facility's computer infrastructure or academic institution where it is carried on. Nowadays, Software as a Service (SaaS) and Infrastructure as a Service (IaaS) have reshaped the industry of data handling, analysis, storage, and sharing. The sector of science does not escape those changes. This situation is particularly true in multinational collaborations, where distributed resources allow researchers to deploy data analysis in diverse computational ecosystems. This project explores how the current multi-cloud (e.g., SaaS + IaaS) approach can be adapted to modest scenarios where analysis pipelines can be deployed using Virtual Machines and Containers containing analysis tools and protocols. This approach aims to replicate sophisticated computer facilities in places with fewer resources like small universities, start-ups, and even individuals who want to learn and contribute to this and other sciences and its replicability. It is desired to explore the development of multi-cloud-compatible tools in physics analysis and operations monitoring using ATLAS experimental and simulated data, adding the Big Data component that the High Energy Physics field has by nature.

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