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## Muon

*Thursday, 12 October 2023 13:30 (2 hours)*

In this session, we will start by introducing some basic concepts about muons: what they are, the sources of muons in CMS, the muon reconstruction algorithm, and the criteria used to select interesting muons for analyses.

After that, you can familiarize yourself with muons in three tasks resembling real analysis tasks:

The first exercise will get you familiar on how to handle muons in CMSSW: looking at a Drell-Yan simulated sample, you will learn to recognize the different sources of muons and how to use identification methods to classify them.

In the second exercise, you will study the resolution of the muon reconstruction, using  $Z \rightarrow \mu\mu$  events as a standard candle. Then, using the same sample, you will try different identification methods and decide which one is more appropriate.

In the third exercise, you will learn how to compute the corrections to cover the difference in efficiency between data and simulated events, using the tag and probe method.

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**Session Classification:** POG exercises