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## A Level-2 trigger algorithm for the identification of muons in the Atlas Muon Spectrometer

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The Atlas Level-2 trigger provides a software-based event selection after the initial Level-1 hardware trigger. For the muon events, the selection is decomposed in a number of broad steps: first, the Muon Spectrometer data are processed to give physics quantities associated to the muon track (standalone features extraction) then, other detector data are used to refine the extracted features.

The “muFast” algorithm performs the standalone feature extraction, providing a first reduction of the muon event rate from Level-1. It confirms muon track candidates with a precise measurement of the muon momentum. The algorithm is designed to be both conceptually simple and fast so as to be readily implemented in the demanding online environment in which the Level-2 selection code will run.

Never-the-less its physics performance approaches, in some cases, those of the offline reconstruction algorithms. This paper describes the implemented algorithm together with the software techniques employed to increase its timing performance.

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