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## *Searching for the Higgs Boson: A Modification to the CMS Trigger at CERN*

The CMS (Compact Muon Solenoid) experiment is a general purpose particle detector on the LHC ring at CERN. One of the challenges of data acquisition at detectors such as CMS is the overwhelming amount of information to be processed every second. In fact, the incoming data must be reduced by about a million times before it can be stored and processed in detail. My work focuses on the Level 1 Trigger in CMS (Compact Muon Solenoid), a hardware logic system responsible for discarding large amounts of unwanted data very fast. It is essentially the first step in “filtering” out interesting events from a mass of background. My project simulates the viability of extending the electromagnetic component of the existing Level 1 Trigger. A trigger system with more emphasis on the electromagnetic component may prove to be more sensitive to electroweak and Higgs interactions which could be easily mistaken for uninteresting information, especially at higher energies.



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