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## A Level-1 Track Trigger for the CMS Phase 2 Upgrade

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The long-term objectives for the Large Hadron Collider (LHC) include data sets with integrated luminosity of several thousand inverse femtobarns. To achieve these, the LHC will run with high intensity beams, which will cause multiple interactions per beam crossing. The number of multiple interactions will be in the range of 140-200. Triggering under these conditions is very challenging and will require new capabilities at the first trigger stage. One possible improvement is the ability to perform charge particle reconstruction in the silicon tracking system. This presentation will review the benefits of including tracking at the first level of the CMS trigger and will discuss the possibility of using pattern recognition algorithms implemented in commercially available FPGAs. The results of initial algorithm performance and a hardware model for a demonstrator system will be presented.

### Oral or Poster Presentation

Oral

**Primary author:** WINER, Brian Lee (Ohio State University (US))

**Presenter:** WINER, Brian Lee (Ohio State University (US))

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