

Abstract Submitted
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Track-based alignment of the CMS muon detector JIM PIVARSKI,
Texas A&M University, CMS COLLABORATION — The outermost layer of the
CMS experiment measures muon tracks with over 700 independent tracking cham-
bers, mounted on modular wheels and disks. These supports can shift and flex
under the magnetic force of the CMS solenoid, so the positions and orientations of
the chambers must be determined under operating conditions. Two methods will be
used to identify the chambers' true locations: a survey system built into the detector
and a software-based optimization of tracks. We will discuss the latter, which poses
interesting challenges due to the large amount of material between muon chambers.
Proper alignment of the muon system is one of the most significant factors in muon
momentum resolution above 1 TeV.

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