



# Physics Slam

Erica Brondolin  
On behalf of CMS collaboration

EPS-HEP 2015, Vienna



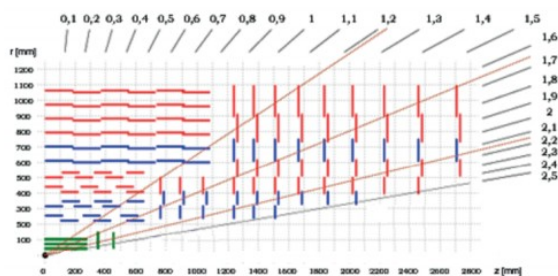
**All you want to know about  
CMSTrackingChallengesYesterday,TodayAndTomorrow  
in three minutes (and three slides!)**

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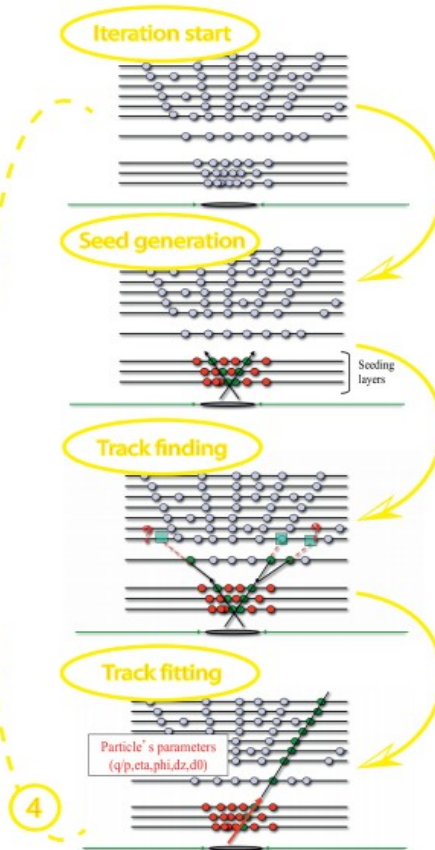
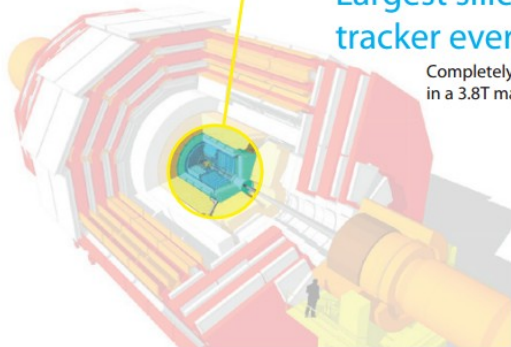
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# CMS tracking challenges

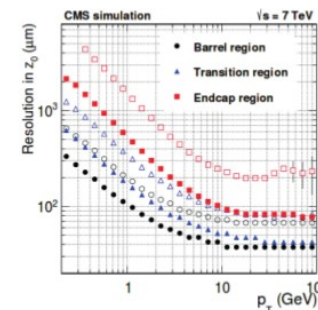
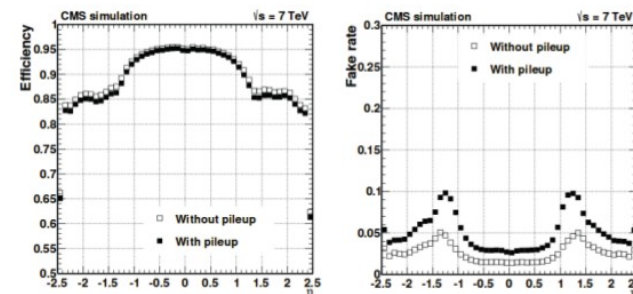
## YESTERDAY, today and tomorrow



**Largest silicon tracker ever built!**  
Completely immersed in a 3.8T magnetic field



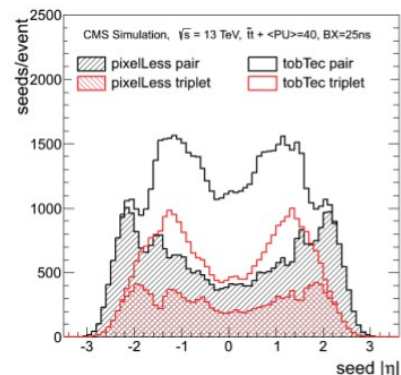
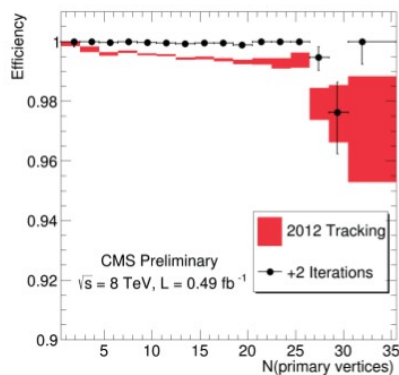
**Excellent performance with low fake rate!**



# CMS tracking challenges yesterday, TODAY and tomorrow



Tracking iteration philosophy is extremely powerful!!

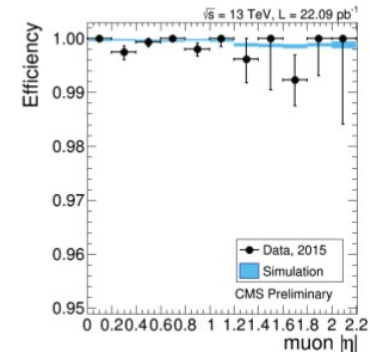
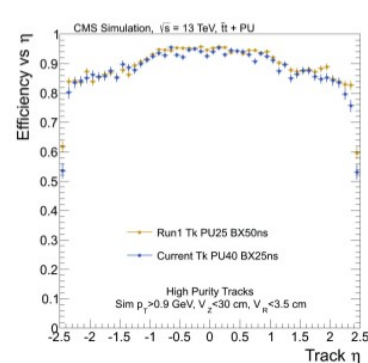


... and much more developments!

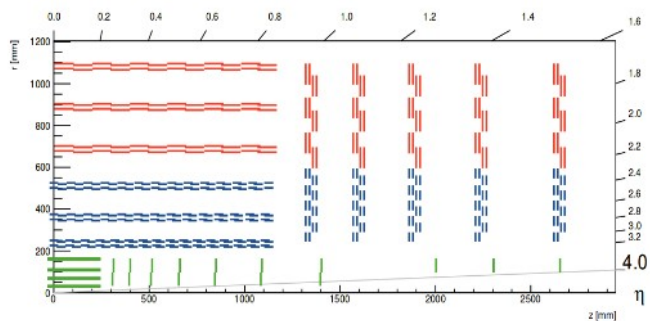
In Run2 CMS will be able to maintain the high tracking performance shown in Run1!

Two new muon iterations:  
OUT-IN & IN-OUT.  
Recover inefficiency for muons for high number of vertices!

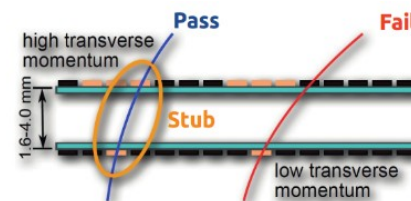
New triplet-based algorithm for strip seeding only.  
Reject half of the fake seeds!



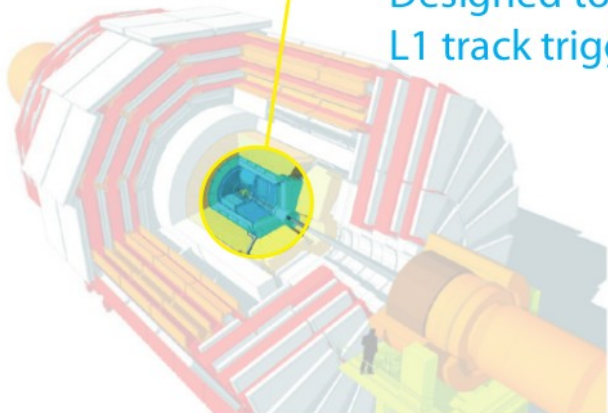
# CMS tracking challenges yesterday, today and TOMORROW



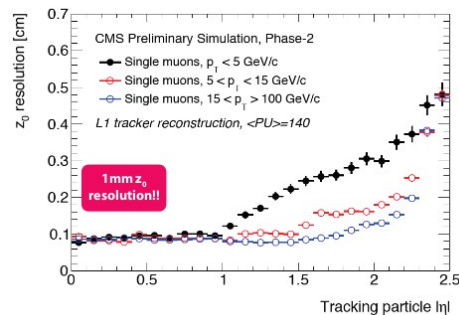
Possibility to discriminate tracks with  $p_T > 2 \text{ GeV}!!$



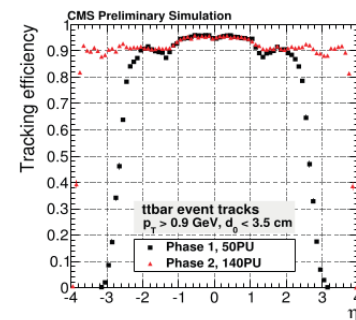
Designed to provide L1 track trigger!



L1 performance really good!



Phase2 performance similar to phase1!



**Thank you for the attention!**

**Good Tracking!**

