



Muon Alignment News

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Another round of reprocessing!

Jim Pivarski 2/5



Here is the timeline (for some value of N):

- ▶ Friday the N^{th} muon alignment meeting: we sign-off:
 - ▶ track-based barrel chamber alignment (method only)
 - ▶ hardware barrel chamber alignment (final values)
 - ▶ whether to use track-based or hardware for this round
 - ▶ endcap disk alignment (method only)
- ▶ Same day: tracker alignment becomes frozen (their final deadline)
- ▶ Two days + 1 contingency: Sasha produces new cross-alignment (GlobalPositionRcd)
- ▶ Next two days + 1 contingency: track-based barrel chambers are updated and endcap disks are updated (in parallel)
- ▶ Final constants posted on HyperNews *whenever they're ready*
- ▶ Friday the $(N + 1)^{\text{th}}$ muon alignment meeting: we sign-off *values* of the final constants and pass them to the Muon POG for testing
- ▶ Next Monday: we present the results at the Joint Muon DPG



- ▶ **What is N ?** A compromise between tracker alignment and muon validation: to be decided in a global optimization— we're just asking for a (Friday-to-Friday) week for our part

Answer #2: approximately October 15

- ▶ **Can we reschedule this meeting?** Only after this sign-off (last slide)
- ▶ **Which alignment updates will be included?** That depends on N , but we will improve only what we're comfortable with and fall back on what we currently have if they don't make it in time.
We have a baseline track-based and a baseline hardware alignment
- ▶ **How will we decide between track-based and hardware in the barrel?**
Gervasio and I are proposing a test that should be conclusive (see my talk, later today)



Improvements to the baseline alignment targeted for this sign-off

- ▶ Barrel hardware: simultaneous fit of chambers within supersectors and supersectors
- ▶ Barrel chamber track-based:
 1. understand and control “variation of residuals within chambers” effect (nearly done)
 2. loosen momentum cut on cosmic rays
 3. check alignment with collisions muons
- ▶ Endcap disk track-based:
 1. loosen momentum cut on cosmic rays (demonstrated)
 2. align with collisions muons
- ▶ Endcap hardware: improvements to Z positions?

Anything else?



- ▶ Marcus raised a good point: this meeting conflicts the Exotica resonances meeting, where $Z' \rightarrow \mu\mu$ and $W' \rightarrow \mu\nu$ are discussed

Muon Alignment	Exotica Resonances
Friday 15:00–? (CERN-time)	Friday 14:30–16:30

- ▶ At least three of us would like to attend both
- ▶ But this is also an important topic for us: these are the two CMS analyses known to benefit from muon alignment
- ▶ Rescheduling is always tricky, but it would be too disruptive to move during this sign-off cycle
- ▶ What do people here think about changing the meeting time, effective in late October?