

# Muonbuilder bug

## fixed in MuonUtils-00-07-45

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Observed in the MuidCollection rare cases (0.1%) of double muon

- In the May reprocessing
- i.e. muons sharing the same ID track
- No problem if combined muons (MuidCB or MuGirl refitted) are used
- if tagged and combined muons are used double muons should be removed

### Origin and fix for the bug

- In the MuidCollection the muons are merged and overlap removed in the MuonBuilder
- Overlap is of two kinds: sharing of ID track and MS hit overlap
- It was found out that **NO** Muon hit overlap removal was applied to the MuGirl muons when compared to a StandAlone muon
- This is a bug bug and is now fixed
- Then it was found out that the Muon was not completely built: to the MuGirl muon the MS track should be added. This is fixed too.
- Extensive testing on these rare cases show that it works.