# Update on realignment study after pixel repair with MP

(MP group)

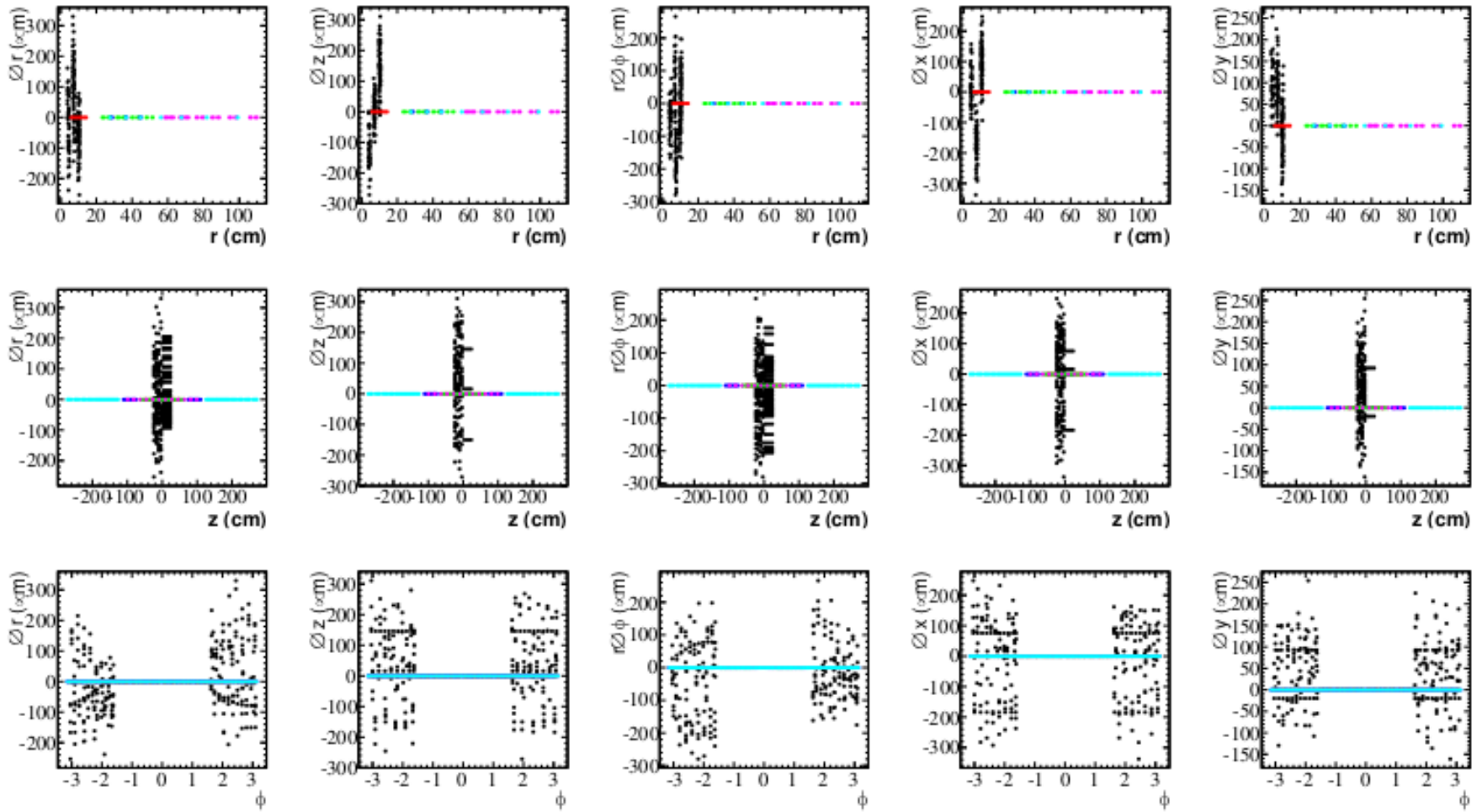
11.11.2014 DESY Tracking Alignment meeting

# Realignment study after pixel repair with MP

- Due to known problem with pixel detectors in CMS Tracker the significant misalignment of part of the tracker is expected.
- The idea of present project is to estimate possibility to recover geometry by alignment in such scenario.
- For this purpose 2012 data have been used in frame of standard 2012 alignment (using standard set of data) procedure with applying expected misalignment scenario on starting geometry. We started from output geometry of 1st iteration of 2012 alignment (mp1485).
- Due to technical reasons Laurence Angle calibration and Backplane Correction have been switched off.

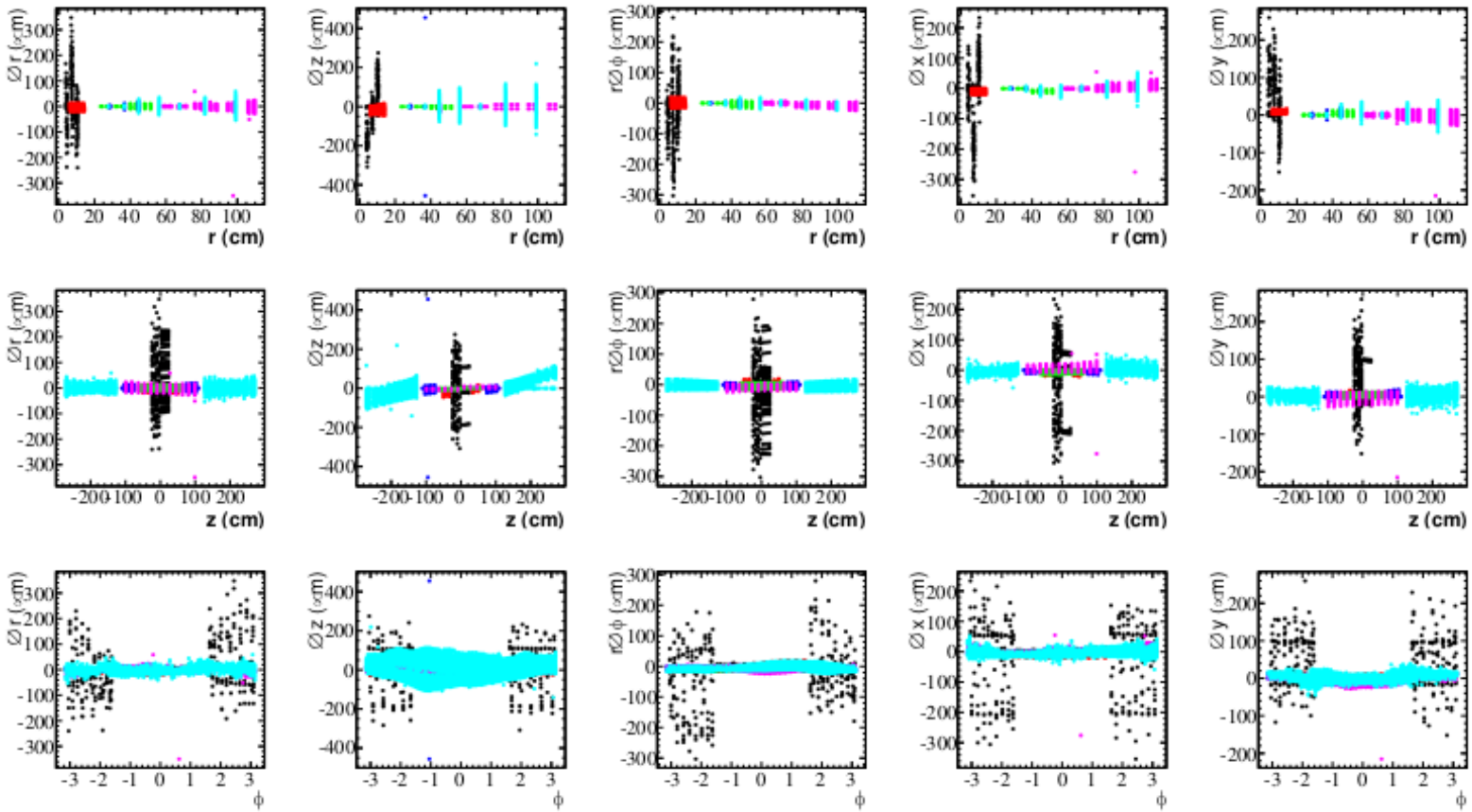
# Realignment study after pixel repair with MP

Misalignment of mp1485output geometry compared to mp1485output geometry. This have been used for studies



# Realignment study after pixel repair with MP

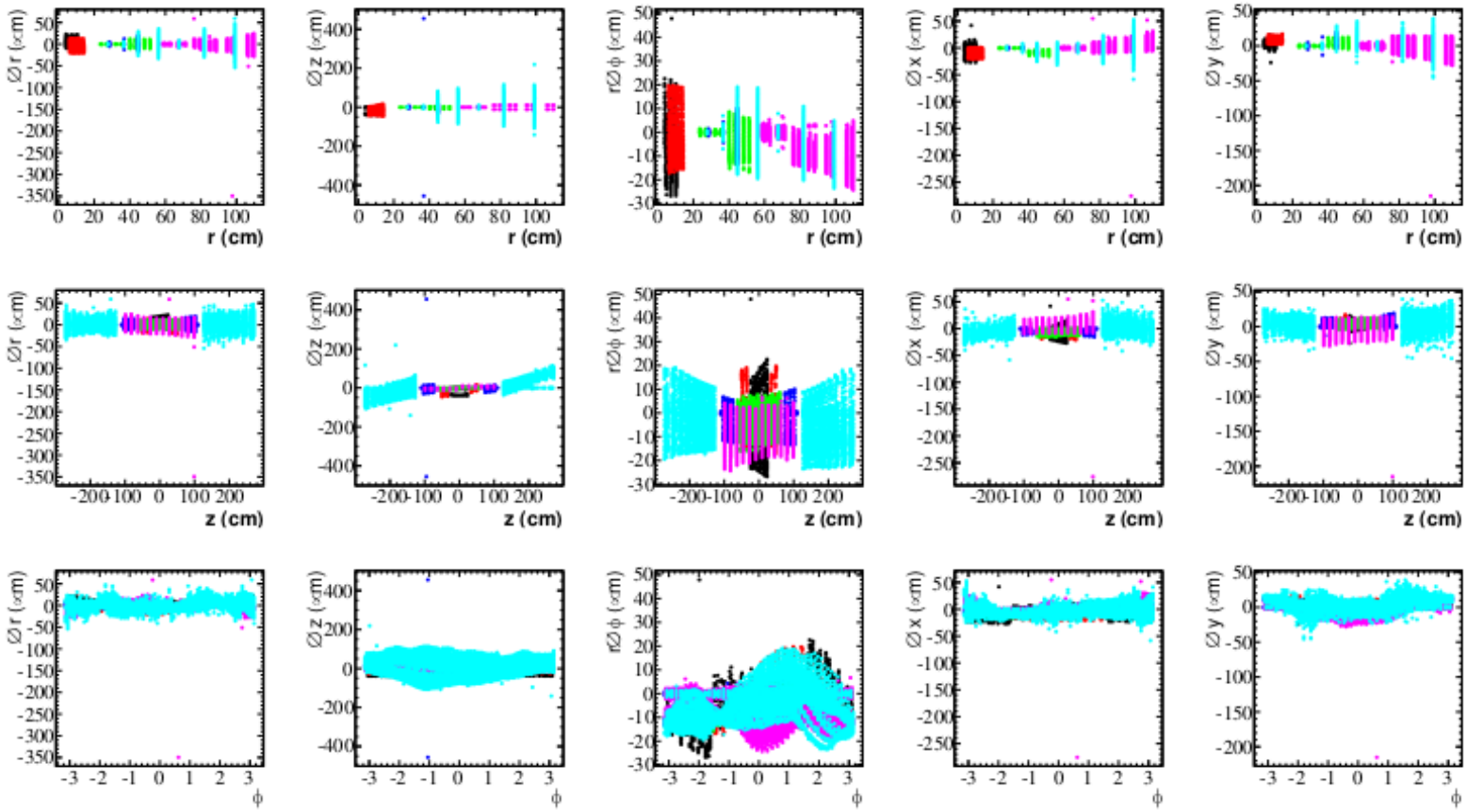
After performing alignment (mp1500) we compare output geometry to misaligned geometry.




Basically this shows us that alignment succesfully recovered misalignment

# Realignment study after pixel repair with MP

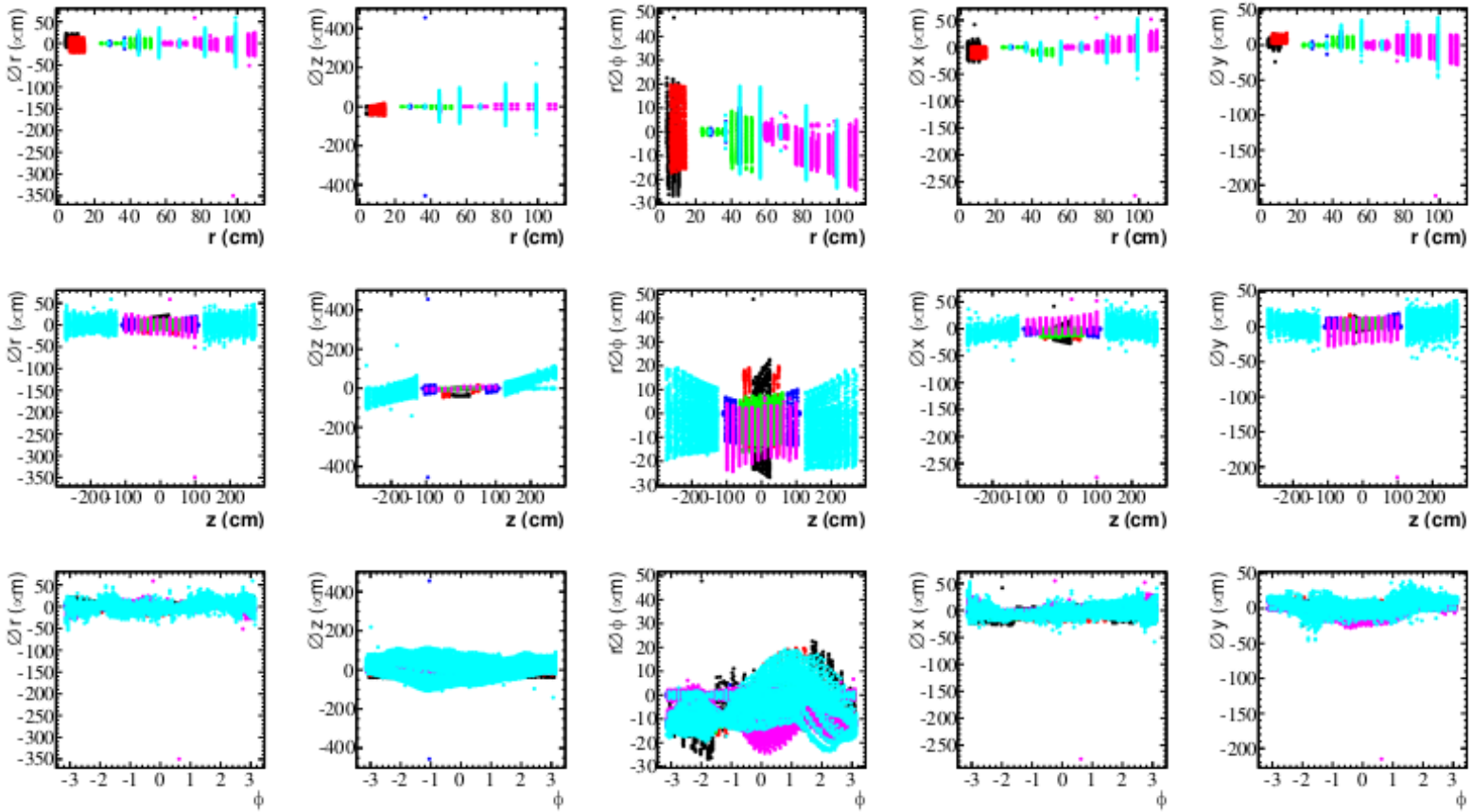
After performing alignment (mp1500) we compare mp1486output geometry (alignment with very similar conditions but without misalignment)




Basically this shows us that alignment succesfully recovered misalignment

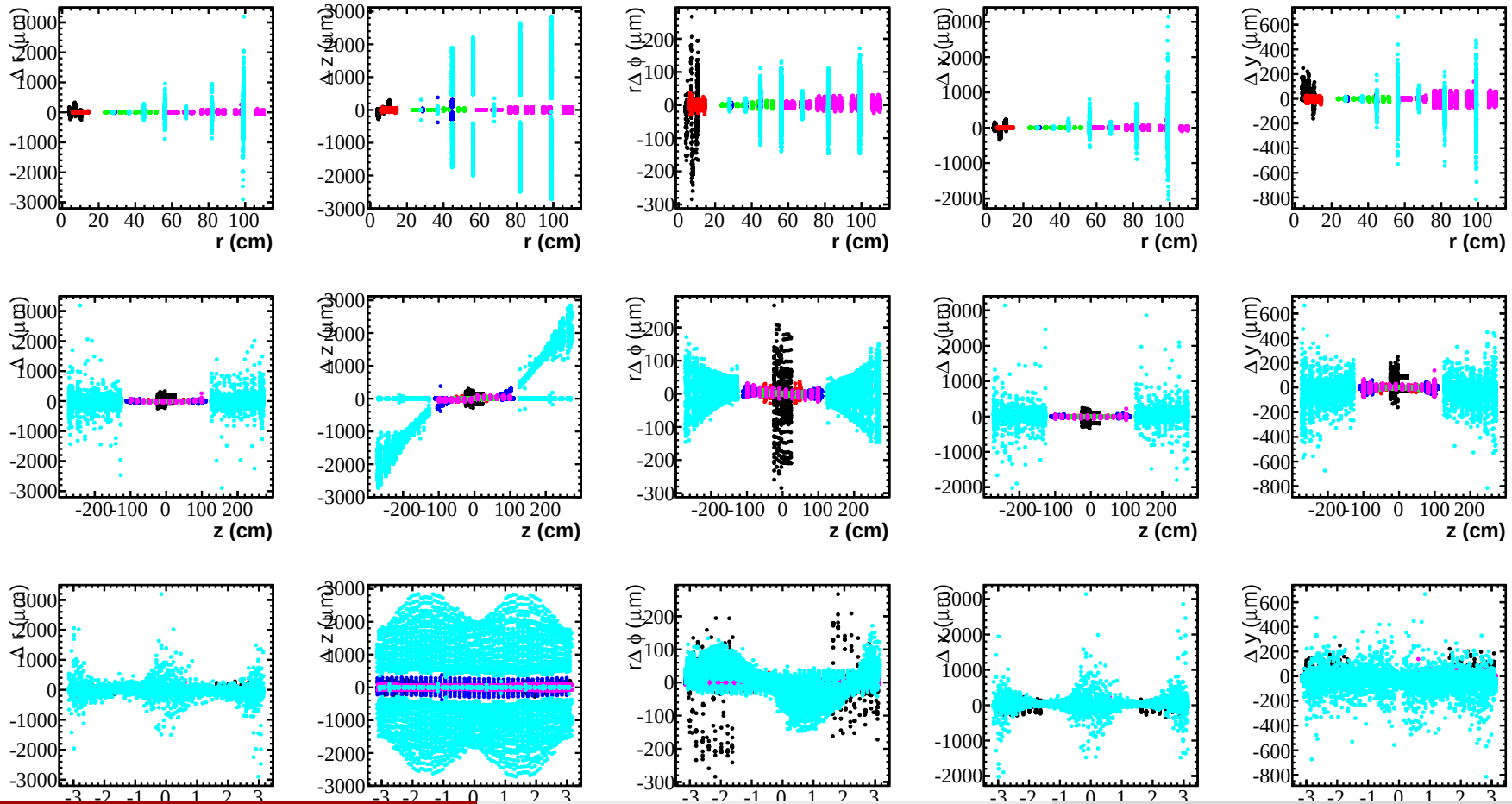
# Realignment study after pixel repair with MP

After performing alignment (mp1504) with reduced 0T data (from 180 000 to 100 000) we compare output geometry with mp1486output geometry (alignment with very similar conditions but without misalignment)



# Realignment study after pixel repair with MP

The same procedure was performed using only cosmics data (mp1500/jobm4) starting from manually misaligned geometry. Geometry comparison between output geometry and starting misaligned geometry



# Summary

- First results from misalignment scenario recovery studies using 2012 data are presented
- Our alignment succesfully recovers from such scenario within our 2012 alignment procedure.
- Reducing 0T data to 100 000 haven‘t changed conclusions