

# People and interests in CRUZET/CRAFT

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| Institution | People                          | Expertise                          | Specific Interests                                  |         |
|-------------|---------------------------------|------------------------------------|---|---------|
| AACHEN      | M.Weber, M.Edheloff, D.Sprenger | Overall view of alignment          | Alignment of DS modules                             | DATA/MC |
|             |                                 | TEC assembly                       | Detect weak modes using MP diagonalization          | DATA/MC |
|             |                                 | TEC alignment in AACHEN and at TIF | Alignment vs. data-taking period                    | DATA    |
|             |                                 |                                    | LAS   | DATA    |
| DESY        | C. Kleinwort                    | MP author                          | Reference Trajectory model                          | MC      |
| Hamburg     | G.Flucke, J.Draeger             | MP developers                      | Interplay between outliers and the trajectory model | MC      |
|             |                                 | Reference trajectory use           | Test of the sensitivity to Det level alignables     | MC/DATA |
|             |                                 | Track based validation             |   |         |
| Torino      | E.Migliore, R.Castello          | Run on real cosmics sample         | Alignment of TIB and TID                            | DATA    |
|             |                                 | (TIB)TID assembly                  | Weak modes in data (a la Zijin and Nhan)            | DATA    |

# Open items

- Revise the current alignment strategy: **Structures and Layers → Dets**
  - Motivation: **move modules not aligned because of too few hits together with the higher level structures they belong to.** Dictated by:
    - how the data were accumulating during CRUZET (separate selection for TEC) and CRAFT (separate selection for PXL);
    - In TIB, shift in z SS modules together with DS modules.
  - Other possible strategies:
    - align Structure+Layers+Dets in one go (limit on the number of hierarchical constraints?);
    - align at Dets level directly (CRUZET used just as cross-check sample);
    - use different alignables.
- Revise the definition of the MP coordinates system: **pre-sigmas**
  - (re-)optimization of pre-sigmas in the different Tracker sub-detectors;
  - usage of 'rrrrr' flags (?).
- Compare different alignment configurations relying more on MP monitoring tools (cf. alignment parameters vs. iteration or chi2/dof in HIP). Until now: decision of cfg1 vs cfg2 based on the residuals from the track-based offline validation.

# Next steps

- Sign-off of constants for new reprocessing: Jan28  
tight time scale → do the same things as done in Fall'08
- **Priorities** for Jan28

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| DESY        | C. Kleinwort                    | MP author   | Reference Trajectory model  | MC                                 |
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| Torino      | E.Migliore, R.Castello          | Run on real cosmics sample<br>(TIB)TID assembly                                 | Alignment of TIB and TID<br>Weak modes in data (a la Zijin and Nhan)  | DATA<br>DATA                       |

- **CAF AFS area**  
`/afs/cern.ch/cms/CAF/CMSALCA/ALCA_TRACKERALIGN/MP/GlobalRun/SRC/CMSSW_X_Y_Z`

with working release of MP (including MPS and pre-sigma cffs) and validation code