

# Inside the new Mokka release

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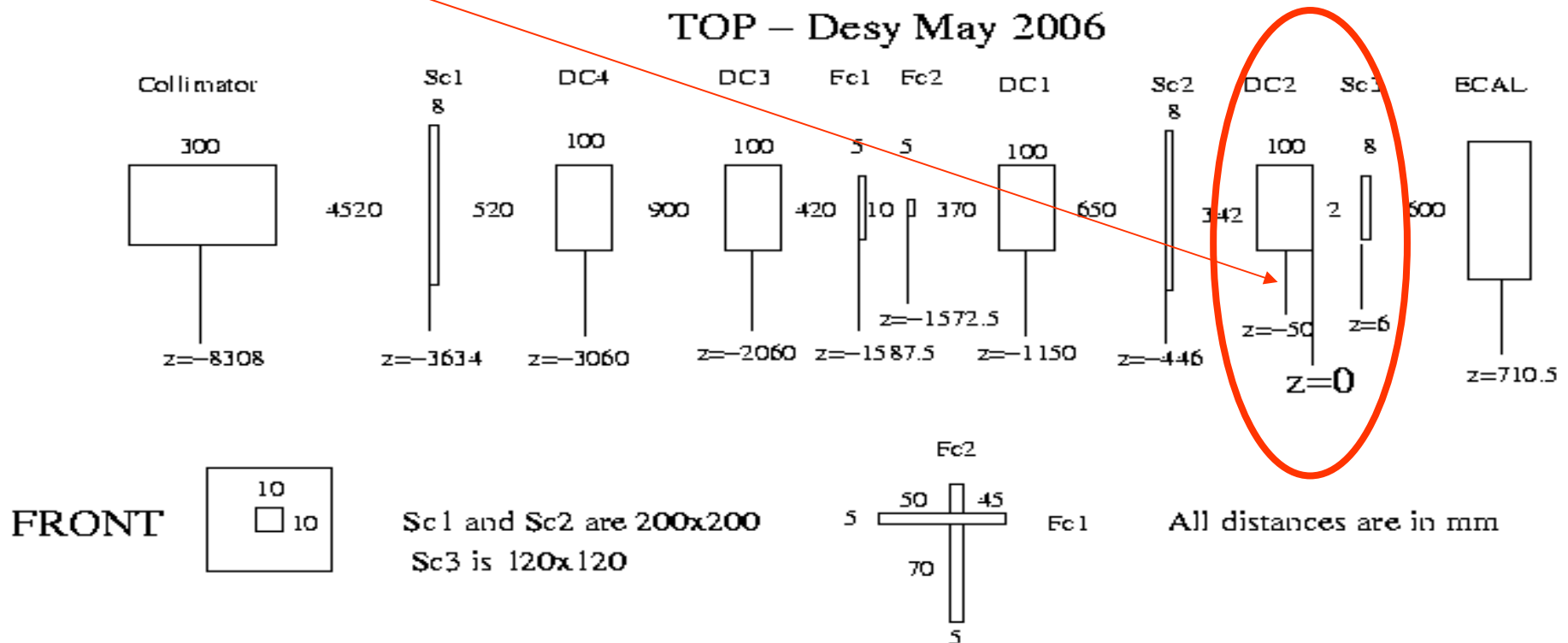


# Towards Mokka 06-03

- New version of G4 (8.2) available, but several problems reported by LHC experiments
  - Use 8.1.p02 for Mokka 06-03 and wait for the patch to 8.2 and, if OK, link Mokka against it in next release
    - Changes in the Makefile due to changes in the physics\_lists
- New version of LCIO recently released (v01-08-01)
  - Test of current Mokka HEAD with it is OK
- New detector models for the Desy and CERN test beams with change in the coordinate system
  - New coordinate system attached to DC instead of back of the ECAL
- Several new features are under development

# Desy 2006 test beam model

- New model for the simulation of the Desy test beam: TBDesy0506\_01
  - Position of all detectors is computed from new origin





# Desy 2006 test beam

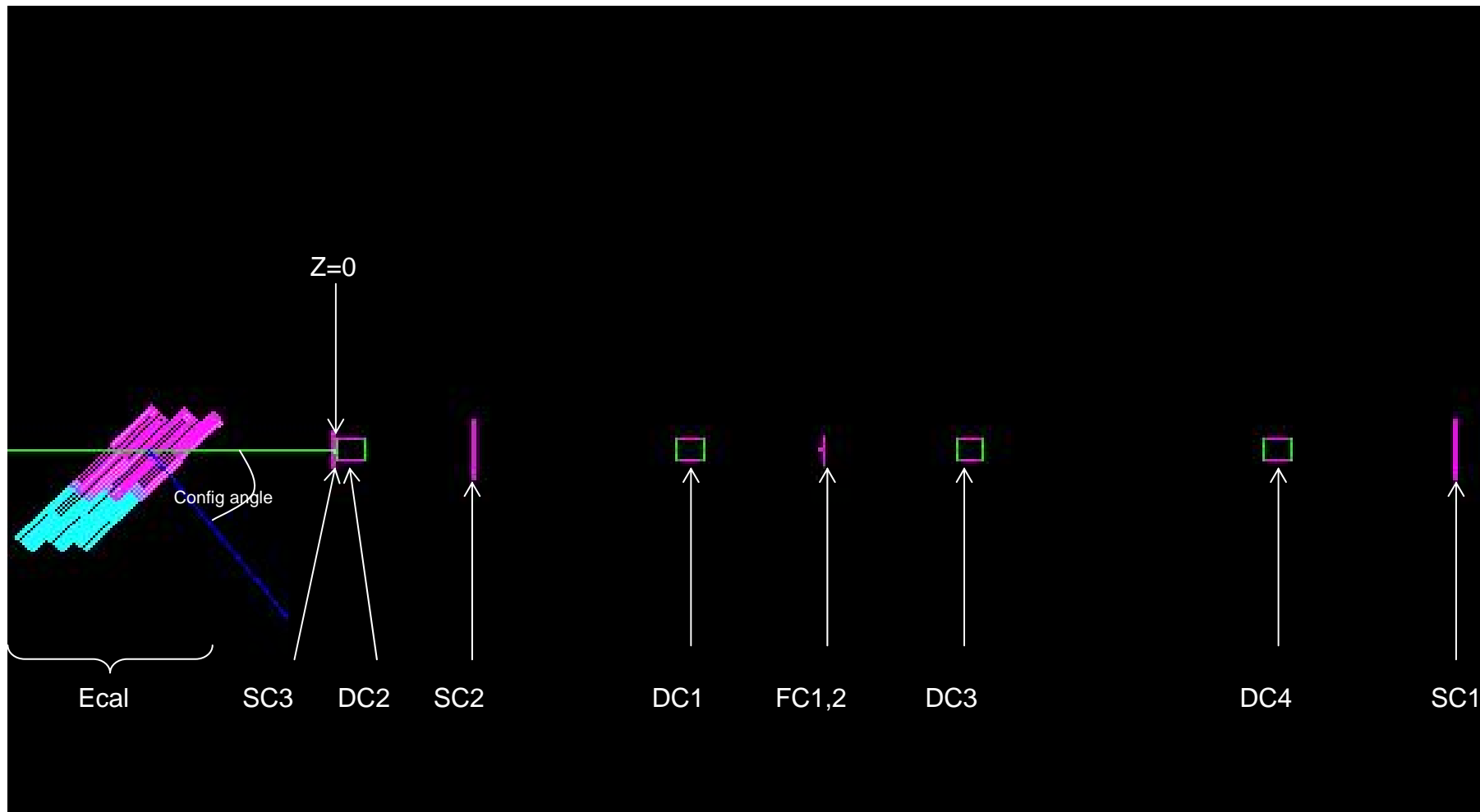
- All tracking detectors now remain fixed when the ECAL is rotated
  - No more dependence from config\_angle in drivers
- Hits in the scintillators are generated as calorimeter hits
  - One hit per detector
- TCMT (G. Lima):
  - geometry driver updated to the new coord. system,
  - ability to perform alignment adjustments (x-y direction) would require additional changes to the TCMT driver



# New ECAL implementation

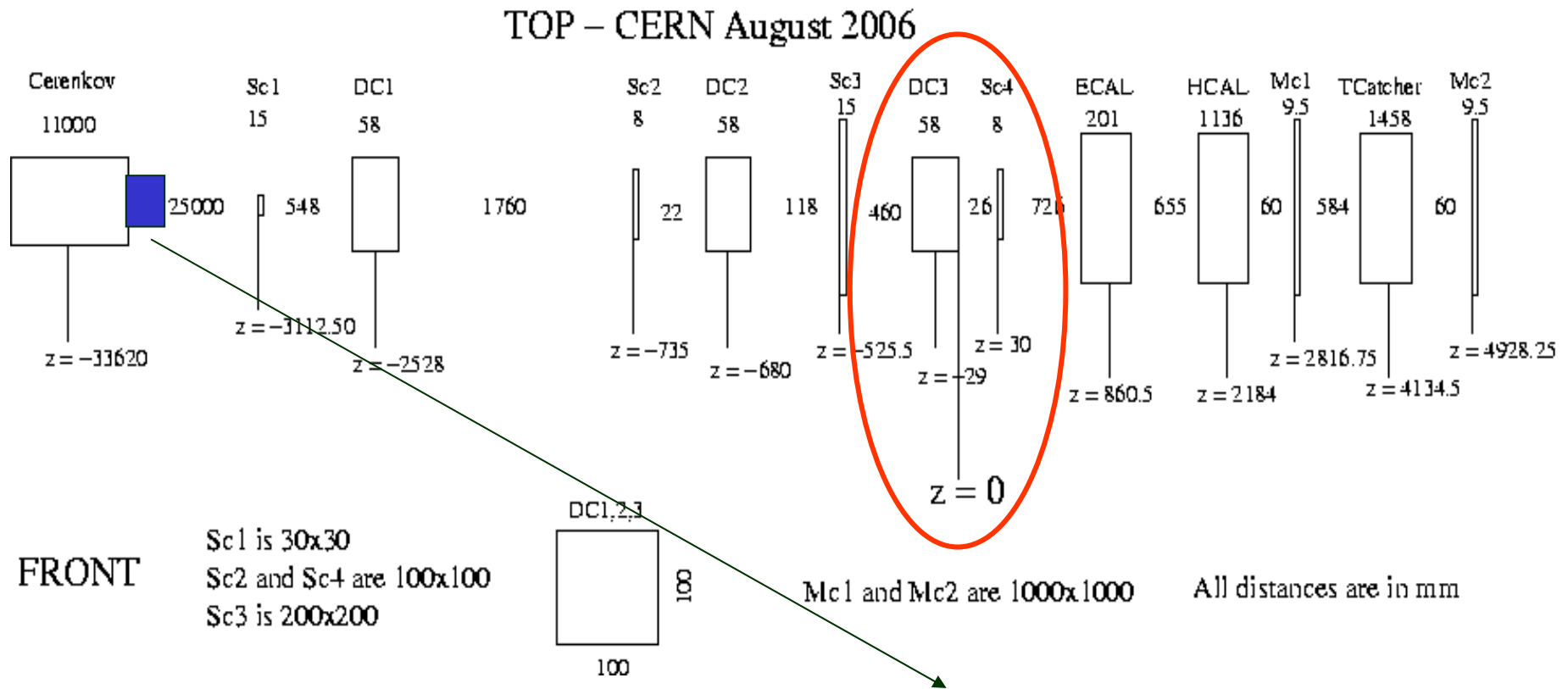
- For all three new models the ECAL modules are rotated and shifted
  - TBCern1006\_01 – only normal incidence should be used
- Rotation angle and module shifts are specified by the detector setup at run-time
- Rotation angle given as global parameter in steering file
  - Possibility of simulating deviations from ideal values (only for Ecal now)
    - /Mokka/init/detectorSetup TB10
    - /Mokka/init/globalModelParameter configuration\_angle 12.5
    - (in any order)
  - At run-time:
    - Real config-angle =  $12.5^\circ$
    - Module shifts according to ideal angle of  $10^\circ$

# TBDesy0506\_01 with ECAL@45°



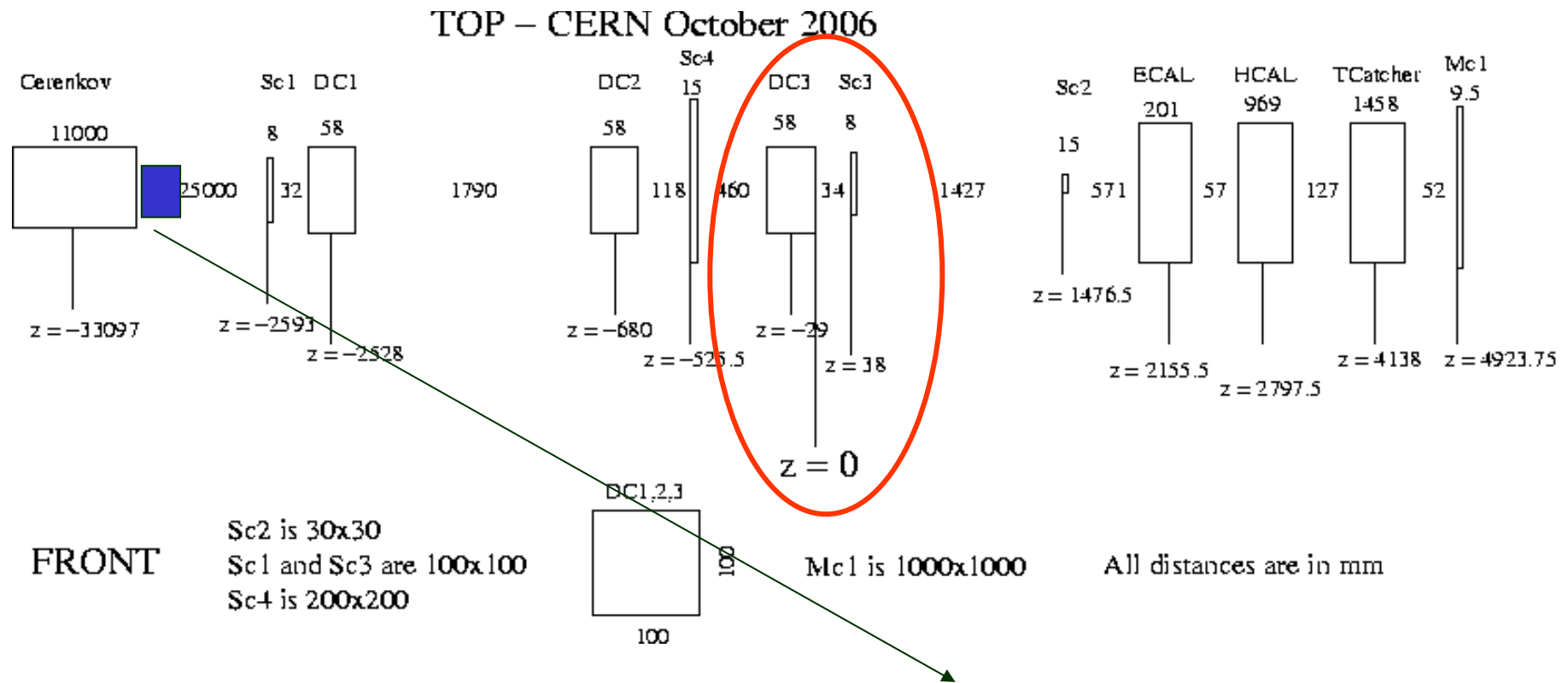
# CERN Aug 2006 test beam

- New model for new coordinate system:  
TBCern0806\_01



# CERN Oct 2006 test beam

- New model for new coordinate system:  
TBCern1006\_01



~10m long vacuum pipe downstream of Cerenkov not yet simulated





# Other developments in Mokka 06-03

- Fetching MySQL Fields by Index (A. Vogel)
  - Extension of bug fix on macOS for queries to tables of a tmp DB
  - MySQL Wrapper commands improved:
    - Database::fetchDouble, Database::fetchInt, Database::fetchString
  - can now address fields in the result of a MySQL query not only by name, but also by index (starting from zero).
- Test-magnet setup with TPC prototype (P. Krstonosic): in progress
- New detector models LDC\_00\_02Sc and LDC\_01\_02Sc (P. Krstonosic): in progress



# Summary

- New version of Mokka (06-03) will be available soon after this meeting, with several important improvements and the new detectors for the simulation of Desy and CERN test beam data using the new coordinate system
  - All info available on the Mokka WEB page:  
<http://polywww.in2p3.fr:8081/MOKKA>
- Bug fix + new features in MySQL wrapper
- Work on new detector models (LDC\_00\_02Sc, LDC\_01\_02Sc) and implementation of test magnet with TPC prototype is close to completion
  - Will be part of the new release