

DESY TB05: Drift Chambers simulation

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Calice meeting, Cambridge, 9th September 2005

Motivation



- n Mokka package already includes all the drivers to simulate calorimeters and μ -chambers
- n In the 2005 test beam at DESY, 4 Drift Chambers (installed by colleagues from Kobe University) provide the tracking of incoming beam particles
 - q These detectors are not simulated in previous stable versions of Mokka (e.g. V04-01)
- n Useful to incorporate in the simulation in order to test results from test beam data

Drift Chambers parameters



Dimensions	72x72x88 mm
Front/Back window	Mylar
Front/Back window's thickness	20 micron
Gas mixture	Ar/Ethane (50-50)
Gas pressure	1.2 atm
Distance of 1st chamber from Ecal front face	500 mm
Distance between DCHs	1000 mm

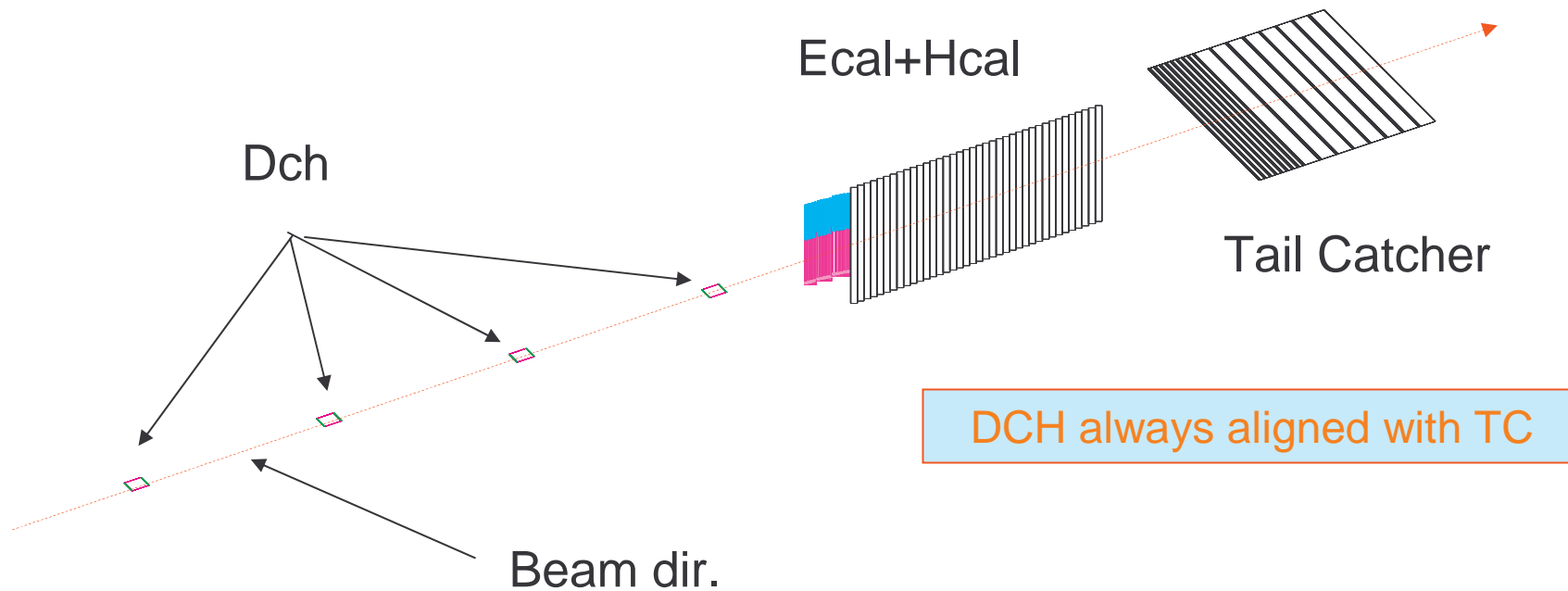
All parameters included in MySQL table (dch00) at IN2P3 (thanks to Gabriel and Paulo)

Description of the driver

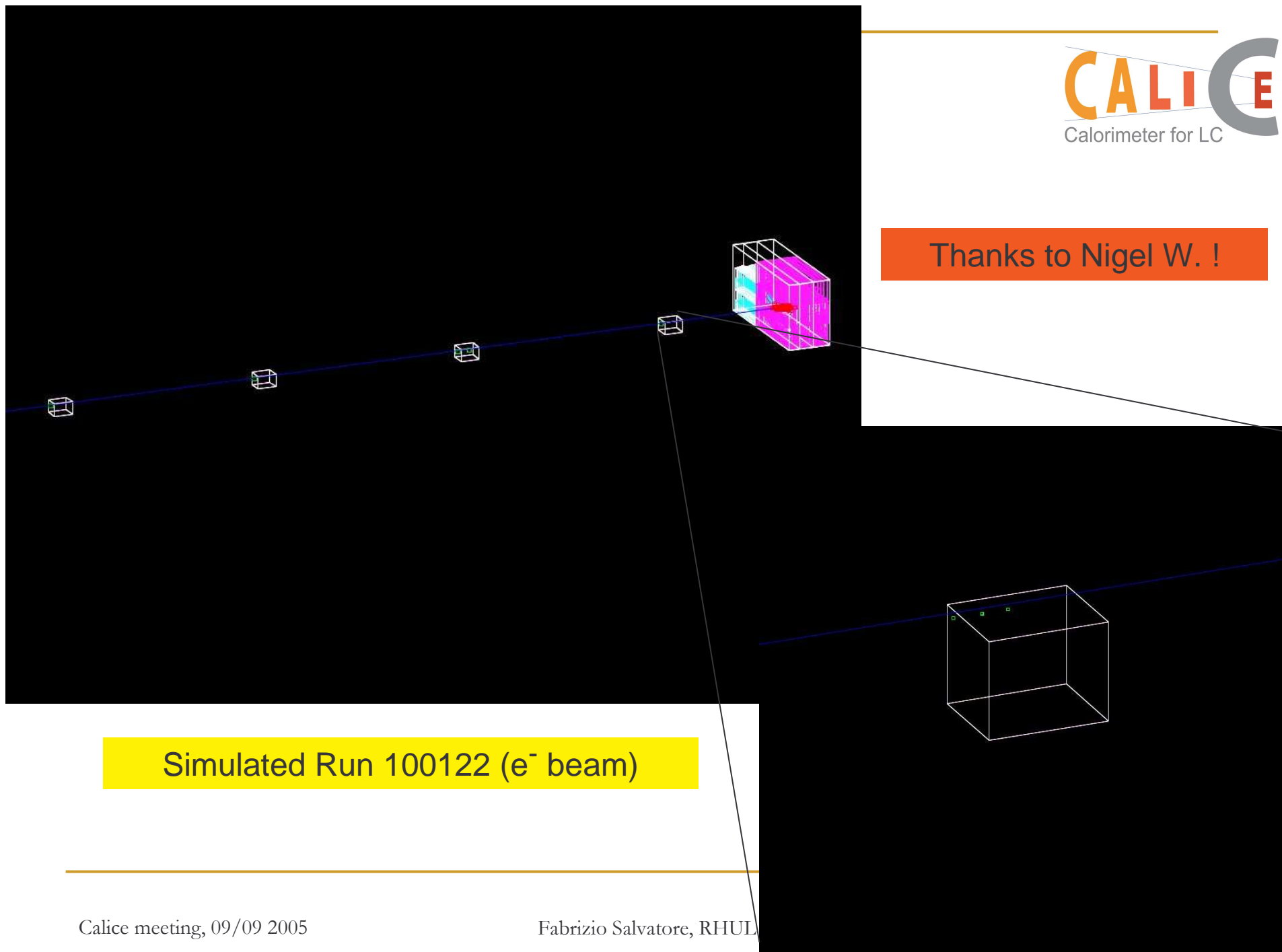


- n Driver built using latest version of TBcatcher driver (TBcatcher04) as a model
 - q Uses ContextualConstruct method
 - q all materials (mylar, gas mixture) defined within the driver
 - q uses TRKHit class in Geometry/CGA to generate the hits
 - n hits are written out in LCIO format
- n Uses the config_angle to align Dch to TailCatcher when beam comes with an angle wrt calorimeters front faces
 - q Dch always perpendicular to beam direction

TB configuration with $\theta=30^\circ$



Thanks to Nigel W. !



Simulated Run 100122 (e^- beam)

Conclusion



- n Dch driver has been included in Mokka since version 04-02

- n Dch parameters, geometry and position wrt other detectors are stored in Calice db at IN2P3
 - q easy to accommodate other set-ups if chambers are used in future test beams