Status of the MEG Monte Carlo

P.W. Cattaneo

The MEG Monte Carlo program: built around the framework REM
consists of

- the physics event generator megeve
- GEANT3 simulation program GEM

Organization in Modules, consisting in a fixed series of routines like a OO class.
Different module types with increasing richness of functionality.
For GEANT Detector the full list is

- xxxini Initialize Module with default parameters
- xxxset Check cards and define extra parameters for Module
- xxxend End processing Module (close files, print statistics)
- xxxcar Define cards related to Module

- xxxhis Book histograms related to Module
- xxxrun Run the algorithm related to Module
- xxxdraw Draw the geometry of Module
- xxxmate Define materials for Module
- xxxinitmed Initialize Tracking media for Module
- xxxtmed Define media for Module
- xxxgeom Define the geometry of Module
- xxxdefhit Define the hit for Module
- xxxhit Calculate the hit for module
- xxxtrev Event initialization for Module
- xxxdigi Calculate the digitization for Module
- xxxout Assemble the output for Module

A documentation, to be improved, of the REM framework is under CVS in meg/rem/doc.

Status of GEM MC

Interactive GEANT

Man power: Paolo W. Cattaneo and Vladimir Tumakov

New feature of the GEM program.
Interactive interaction with the geometry and the events.

To be done :

- Learn how to use it
- Write kumac of general use
- Implement the Motif interface

Drift Chambers DCH

Man power: Hajime Nishiguchi

Progress:

- Improved integration of the time to distance profile from GARFIELD
- Implementation of the digitization banks ddch with position, energy and time avalanche
- GEANT simulation of Vernier electrode patterns

To be done :

- Effect on signals of electrode patterns
- Electronic simulation
- Signal digitization
- Improving details of material distribution, e.g. electronic cards, cables

Timing Counter for Phi

Man power: Paolo W. Cattaneo

Progress:

- Implementation of more geometry details: cables, jacket
- Actual material distribution of phototubes
- Prleiminary mechanical support
- Generation of photons in the bar
- Propagation of photons to the PMT

To be done in order of priority:

- Improving photon propagation
- Improving details of material distribution, e.g. complete jacket, exact bar geometry
- Electronic and PMT simulation
- Signal digitization

Timing Counter for Z

Man power: Paolo W. Cattaneo

Progress:

- Implementation of the actual geometry: square fibers
- Addition of photodiodes

To be done in order of priority:

- Generation of photons in the fibers
- Propagation of photons to the diodes
- Electronic and diode simulation
- Signal digitization
- Improving details of material distribution, e.g. electronic cards, cables
- Add mechanical support

Liquid Xenon Calorimeter

Man power: Shuei Yamada, Kenjii Ozoneand Fabrizio Cei

Progress:

- Implemented the final geometry
- ZEBRA output for hit timing

To be done :

- Electronic and PMT simulation
- Signal digitization

Graphics

Man power: Paolo W. Cattaneo

Progress

- Introduction of interactive GEANT

To be done

- Running event display offline

Beam and Target

Man power: Wataru Ootani

Progress

- The muon beam simulation based on phase space is into Megeve
- Elliptical tube option for target

To be done for target and beam

- Complete the beam transport within the detector
- Implementing final target with support

Trigger

Man power:

To be done for trigger (everything)

- Simulate the signal splitting for the subdetectors
- Simulating the trigger electronics
- Implements the IO for trigger information