EmCal progress report

News wrt:


http://hep04.phys.iit.edu/cooldemo/cm/cm13/cm13_chimenti_emcal.ppt

........ but I'll not mention all arguments .....
Visit to Beam test Facility at LNF

- We (Domizia, Ludovico, Maurizio) met with Paolo Valente during the P326 test beam periods on dec 21st-22nd and jan 19th.

- Standard equipment (H.V., Discriminators, TDC, ADC) are available for a limited number of channels: enough for EmCal & TOF prototypes, but the cables (H.V. and signal) for EmCal have to be procured.

- As the DAQ system on site is based on LabView sw, we agree that a more convenient system could be used for MICE test beam.

- The DAΦNE Beam Test Facility (http://www.lnf.infn.it/acceleratori/btf/)
  - Energy range: 25 - 750 MeV $e^+$ or $e^-$, with a beam spot of few mm$^2$
  - Repetition rate: 50 Hz and Pulse duration: 1 ÷ 10 ns
  - Current/Pulse: $1 \div 10^{10}$ particles
  - Allowed current: $10^3$ particles/sec (safety restrictions for “long” runs)

- OK for study the detector response to $e^+/e^-$ → $\mu$ test at PSI?

- Due to the peculiar beam structure is unsuitable for MICE_DAQ tests.
Status of EmCal at Roma III

- **We are ready NOW to start the lead foils production**
  - the lead shaping machine(s) have been refurbished, secured and restored
  - a lead spool have been procured and the personnel training started on jan 10th
  - safe area and movable supports to store the lead foils is almost ready

- **Waiting for fibers**
  - Bicron glue BC 600 has been procured
  - by using fibers leftover from CHORUS production (more than 12 years old...)
    a couple of proto-prototype 12x12x4 cm³ have been assembled
  - yesterday they have been cut to evaluate the quality of the composite
    (by eyes, it seems good ... let’s wait for the profiles machine response...)
    and to have, in particular, a feedback for tuning the gluing procedure

- **WARNING : decide the dimensions NOW**
  - being MICE a not (yet) approved INFN experiment, personnel assignment
    has been obtained in sharing with ATLAS and ARGO which remain the main
    activities; in particular it has to be taken into account that from 20th of march
    people will be engaged for the ATLAS_MDT installation at CERN.
  - for time being we are main (and unique) users of the lead shaping machine
    but P326 is behind our door asking to use the equipment asap and it’s an approved
    experiment by INFN-CSN_1.
  - In the mean time we have to do in-house the winston cones light guides too.
  - Therefore by next Easter (or 350 days before .... as Alain would say)
    the first two modules have to be assembled.
Status and plans towards LNF test beam

- BTF is fully booked till April 2nd, when the LNF accelerators complex will be stopped for a two months long shutdown.
- We have submitted a beam time request for 10 days as soon as BTF is foreseen to restart (June 1st).
- Taking into account the small beam spot dimension, it seems reasonable to test EmCal modules not larger than 3 cells.
- To be decided:
  - How many: my preference is for 2 modules.
  - How long: 80 cm or 120 cm.
  - Cell dimensions: my preference is for thickness of 36 mm.
- A lot of work to do in parallel with the module construction at Roma III:
  - Buy and test the fibers (latest news say BCF12 is winning against SCSF81).
  - Test PMTs (possibly with and without B field).
  - Daq for test beam.