Proposal for Tokyo involvement in LC ECAL activities

these slides are intended to provoke discussion,
not to present conclusions

Your input is requested!

Group members

Sachio Komamiya (professor @ dept of physics, director ICEPP)
grant from MEXT for calorimeter development

Wataru Ootani (associate professor @ ICEPP)
Heavily involved in MEG
Analysis, upgrade (MPPC for ECAL)
Interested to join ILC ECAL activities
possibly with new student from April

Yoshio Kamiya (assistant professor @ ICEPP)
Interested to join ILC ECAL, on hardware side

Daniel Jeans (project researcher @ dept of physics)
employed via MEXT grant

Chihiro Kozakai & Shiro Chen
Komamiya-san's 1st year Master students

(no in-house engineers)

From DBD “future directions” ECAL section

• silicon technology: sensor guard rings, AC coupling, chip bonding, PCB thick-ness,

• scintillator technology: developments of MPPC with more pixels and photon readout system,

• further hybrid simulation studies,

• development of mass production and mass test system of sensors,

• alternative sensor technologies: e.g. MAPS,

• further studies of power pulsing,

• possible reduced scope (for cost reasons): reduced layers, radius. estimate of cost scaling.

Would like to contribute to simulation studies:

- further hybrid simulation studies,
- possible reduced scope (for cost reasons): reduced layers, radius. estimate of cost scaling

We have started some hybrid ecal simulation studies.

Avoid overlap with current efforts

Mostly @ Kyushu, LLR, LAL

Discuss this now...

Would also like to start hardware activities

Limited resources at present
Not yet started, want to discuss in this meeting
before making significant investment

Want to be strongly involved when (if) ECAL construction starts
Proximity to Hamamatsu suggests work on sensors

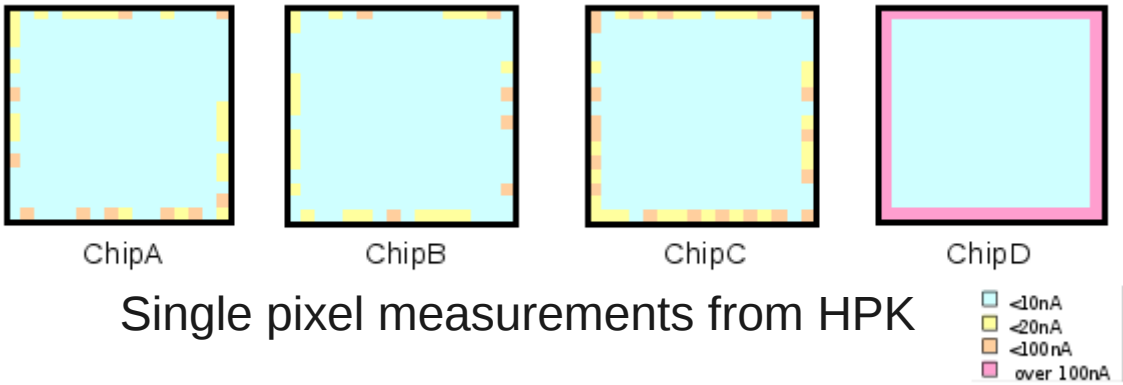
- development of mass production and mass test system of sensors

Will need several sensor testing labs if/when mass production starts
I would like to be part of this

I propose that in the short term, we start with
small silicon sensor test bench
begin with simple I-V, C-V characterisation
(copy of LLR, Kyushu setups)

Ootani-san is also interested in MPPC/scintillator ECAL
natural connection to his present activities
To be discussed with Shinshu

Once basic setup established,
- expand into more specialised areas:
  - scalable system for mass tests?
  - single pixel measurements?
  - neutron radiation hardness?



Single pixel measurements from HPK

Coordinate with LLR/Kyushu to avoid un-useful duplication

Also participation in beam tests and analysis of technological prototype

Clearly large overlap with Kyushu/LLR activities in the initial stage
- I don't see this as a problem:
  - we will certainly need several labs to make identical basic tests in parallel when mass production arrives

More specialised studies should be shared amongst the groups

Your comments and suggestions are welcome

We would like to decide on our future activities in the next few weeks