Minutes of the 26th SiD optimization meeting

9-March-2015

Present:

Marty Breidenbach (MB)
Joel Goldstein (JG)
Norman Graf (NG)
Richard Kriske (RK)
Tom Markiewicz (TM)
Christopher Milke (CM)
Bruce Schumm (BS)
Jan Strube (JS)
Andy White (AW)

Agenda:

There were no scheduled agenda items.

Points of discussion:

- Occupancy study:
  - some large xs processes are still missing
  - only ~ ⅓ of the pair background expected in a hi-lumi bunch train. Currently unclear who could produce new background. New expertise being built up at DESY
- Forward layout:
  - Following Tom's presentation last week, started a brief discussion on the geometry of the simulation vs. engineering. The lumi cal and beam cal should both be centered on the outgoing beam pipe.
  - Tom discussed reviving the Geant3 studies of the back-scatter into the detector with Takashi. There are no resources to revive these. A new effort should be started using our current tool set. Bristol expressed interest in these, but does not (yet) have the expertise to contribute.
- Studies of ECal showers (range switching in KPix)
  - Oregon studying the deposited energy in a pixel as function of pixel size and particle energy. Sensors with an epitaxial layer less than 300 μm might be feasible for 1 mm^2 pixels.
- KPIX progress:
  - progress on attaching the KPix to the wires has been made. Currently two options seem feasible: a) bump bonding b) new kind of wire bond using conductive epoxy on the pads.
  - New iteration with shielding layer and gold pads has been negotiated with Hamamatsu. Small amount of funding still needed.

Action Items:

- Confirm the current sidloi3 geometry. Is beamcal centered on outgoing beam pipe or on 0, 0? (NG)
- Invite Oregon to present their studies (JS)
- Invite NIU to participate in studies of scint HCAL (AW)