

Tuesday 22 September 2009

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1. Some News

C.K. reported on the outcome of KEK's application for partial support of SuperKEKB within the new stimulus program "Most Advanced Research & Development" issued by the Japanese Government. The ministry of Research and Technology (MEXT) had urged KEK to apply for this fund. Unfortunately, the application was turned down. So KEK will now return to their original plan of being funded through MEXT. While the turn-down is a bit disappointing, it is not seen as a signal against the SuperKEKB project, since mostly applied sciences had been supported by the stimulus program. The schedule for a decision on the machine funding by the Japanese government (end of FY 2009) has not changed.

A new "Tracking Task Force" has been initiated in a meeting in Vienna (Sep. 15, 2009). The motivation for this initiative is to write new, efficient, well documented and maintainable tracking code for Belle-II, usable within the new frame work being created for Belle/Belle-II by the framework group. About 20 colleagues from Vienna, Prague, Karlsruhe, TU Munich and MPI participated, mostly engaged in the Si-part of Belle-II. The new group will have regular meetings, chaired by Martin Heck from Karlsruhe. The goal is to have the new code ready within about 2 years.

On Sep. 17, Thomas Müller (Karlsruhe), Hans-Günther Moser and C.K. (both MPI) had a visit at the Optigraph Company in Berlin, who produce the TPG material which will potentially be used as thermal conductor in the cooling scheme of the PXD electronics. The TPG price will be about 10 €/cm². We received some free samples for testing.

A few items of the action list could be accomplished recently. New items are the definition of the DHH and the preparation of a Belle-II note, compiling the existing documentation on the DEPFET project in view of its application in the Belle-II detector.

2. Masako Iwasaki gave a status report on the Machine and the Interaction Region. Recently, vibration measurements in the experimental hall had been done (on the Belle support table). These measurements showed at peak at 3 Hz, with an amplitude of about 100 nm.

The planned crossing angle of the beams is 83 mrad and would lead to an angle of 26

mmrad between the beampipe and the Belle solenoid, if Belle keeps its present position. The cost for a rotation of Belle are presently evaluated, which may amount to about 2 okuyen (2 million \$). Several rotation schemes are being discussed.

One of the main concerns at the moment is the vacuum in the interaction region. It is estimated to be about 100 times larger than at present, caused by the very small beampipe diameter over the whole interaction region between and including the focussing quadrupoles on each side. The background simulations (beam-gas, Touschek (intra-beam scattering), synchrotron radiation) have started. The calculations indicate about a factor of 20 more background due to Touschek, and a beam-gas component which mainly comes from upstream, probably not hitting the detector. The assembly schemes for the Interaction Region are also in progress.

3. Rainer Richter reported on the status of the PXD6 prototype production. After the delay due to the problems at the Soitec Company, the further steps are running smoothly. Production at the wafer front side has been started (delayed by about 6 weeks due to a backside hole problem created during external processing). With a further delay of a few days the first set of critical layer depositions (nitride, poly, lto) has been accomplished. A further technology option (reduction of the poly1 thickness) was introduced with the hope to get rid of the poly1/poly2 breakdown problem encountered previously. The wafers were sent out for external poly doping, which takes about 1 week (including transport).
4. Stefan Heindl presented some new measurements on the thermal properties for diamond (CVD) on the Si ladder dummy. Karlsruhe (KA) will investigate the solution “CVD on top” with TPG as heat channel to take away the heat generated by the chips. Valencia (V) pursues the “CVD on bottom” (CVD under the DEPFET and the chips). So far KA did not yet couple the heat sources to the CVD (TPG is foreseen for this). KA sees some problems with the mechanical properties of TPG. After the Barcelona meeting a new and realistic setup will be built up to study the “CVD on top” solution.

Simulations are ongoing both in KA and V for the two solutions, based on boundary conditions which had been defined in a separate meeting (see Carlos’ foils on the Twiki). The results should be reported in Barcelona. MPI is also simulating the thermal coupling of CVD to Si and will hopefully have results for Barcelona.

5. Organisation of Barcelona meeting
C.K. (for Angel Dieguez) reported shortly on the status of organisation for the Barcelona meeting. The conference page has been prepared by Barcelona (see <http://icc.ub.edu/congress/DEPFET-2009>). On this page you should please register. The page has a link (“Agenda”) to the Indico page of the MPI, where the agenda will be managed (see <http://indico.mppmu.mpg.de/indico/conferenceDisplay.py?confId=625>). We have a total of 8 sessions with 90 minutes each, a convenor is assigned to each of them, who will organize the talks. We have already more than 35 participants registered.

Note added:

There is a conference fee of 100 Euros, which should be paid preferentially before the meeting (see details on the registration page). It will not be possible to pay the fee on site with a credit card, only cash works. Those who use bank transfer, please send a scanned document, showing the transfer has been initiated, to Angel (adieguez@el.ub.es) or bring it to Barcelona.

6. AOB

Peter Kodys reported on progress on the mini matrix electronics. The noise properties seem good for the tests, there are still some problems waiting for tuning.

The software for the xboard is under control, using the root framework (Peter's job).

The mini matrix electronics are presented on TWEPP, September 21-25, 2009, in Paris by Jan Scheirich. More details will be presented in Barcelona.