**Minutes, 69th PXD EVO Meeting, 9.4.2014, 14:00**

Present: H.-G. Moser, A. Campbell, A. Ritter, A.Frey, B. Spruck, C. Marinas, C. Niebuhr, C. Kiesling, C. Kreidl, D. Levit,, F. Müller, F. Lütticke, E. Konorov, I, Kishishita, J. Ninkovic, L. Andricek, L. Li Gioi, M. Valentan, M. Ritter, M. Ritzert, P. Avella, R. Richter, S. Tanaka.

Agenda

Wednesday, 9 April 2014

* 14:00 - 14:20 IBBelle: status & plans *20'*

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| Sprecher: | Prof. Christian Kiesling (Max-Planck-Institute for Physics) |

* 14:20 - 14:40 EMCM assembly and production: status & plans *20'*

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| Sprecher: | Laci Andricek |
| Material: | [**Slides**](https://indico.mpp.mpg.de/materialDisplay.py?contribId=1&materialId=slides&confId=2800)pdf file |

* 14:40 - 15:00 EMCM tests *20'*

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| Sprecher: | Mandfred Valentan |
| Material: | [**Slides**](https://indico.mpp.mpg.de/materialDisplay.py?contribId=2&materialId=slides&confId=2800)powerpoint file |

* 15:00 - 15:20 DEPFET workshop in Seeon *20'*

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| Sprecher: | Laci Andricek (MPI fuer Physik, HLL) |

* 15:20 - 15:30 Module Tests: Implementation of DACs *10'*

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| Sprecher: | Florian Lütticke |
| Material: | [**Slides**](https://indico.mpp.mpg.de/materialDisplay.py?contribId=5&materialId=slides&confId=2800)powerpoint file |

* 15:30 - 15:50AOB *20'*

**Meeting on IBBelle (C. Kiesling)**

A meeting on IBBelle (and Marco) was held at CERN 8.4.2014 (C. Kiesling, H.-G. Moser. K. Ackermann, C. Niebuhr, R. Stever, B. Verlaat, J. Godlewski, L. Zwalinski, P. Petagna).

Status of ordering components for IBBelle: An inventory of the parts needed has to made before ordering, especially for the electronics. Reinhard Sedlmayer from MPP will be asked to help. In addition some modifications are needed (a larger version of the chiller is recommended).

Upgrade of Marco: In its present configuration Marco has not sufficient cooling capacity for the full thermal mock-up (PXD & SVD). In addition the gear pump is not reliable. The plan is to exchange the gear pump by an adjustable single stage LEWA pump with remote head and upgrade eventually the chiller. Still, tests of the PXD alone can be done before the changes are implemented.

Return of Marco to CERN: We can keep Marco till spring 2015. Then CERN has to decide what they will do with MARCO. Since we need a cooling system for the assembly and test of the PXD at Munich in the 2nd half of 2015 they should tell us their plans early 2015 so that we have time to procure an alternative to MARCO (e.g. an open system).

**EMCM assembly and production (L. Andricek)**

One PXD6 (with one DCD/DHP and 4 Switcher) has been assembled. It needs to be glued (carefully, to avoid stess) on a hybrid6 board. It should then be sent to Bonn, especially for tests of the pedestal homogeneity.

Felix: the hybid6 board needs to be modified to avoid the wrong voltages which might damage the switchers.

Two EMCMs (with one DCD/DHP pair) ware finished. One is ok (except one missing bond pad for the DCD, just one channel disconnected). The other was damaged (one corner cracked, which does not really harm). More seriously is a short of the termination resistors. To be checked. The two EMCMs are now in Freimann for Kapton attachment.

More EMCM wafers (batch 3 are in production. One set of four wafers is essentially ready to be measured with the ATG. The results from the probe station measurements were excellent. Then it needs passivation and cutting. To be ready for assembly in 2-3 weeks (ASICs needed!).

Another batch needed rework. Unfortunately one (of four) wafer was lost during the re-work. The others were measured with the probe station. They are good, albeit not as good as the other batch. Now they will be prepared for copper.

**EMCM tests at the HLL (M. Valentan)**

Manfred reported on automatic tests in order to measure the transfer characteristics of the DCDs on an EMCM. He used the fully populated EMCM for that. Measured were pedestals, noise and linearity. Some non-linear behaviour was found, in some regions this is quite pronounced. Similar things were observed by Florian on an hybrid4.

**Operation of 2bit DACs (F. Lüttikcke)**

Florian used a hybrid5 setup to operate for the first time the 2-bit DACs on an assembly. The DAC is controlled by the DHP and can add an offset current for each pixel. The DACs can be used to equalize large pedestal al variations. This is especially needed for the PXD6 beam test module which has pedestal variations exceeding the dynamic range of the ADC. Unfortunately the operation of the DACs is not easy. They don’t work in ‘acquisition to memory’ mode which is used to get a full frame. Some tricks are needed to get it working. Nevertheless Florian could show that they basically work. The problem will not exist with the DHPT.

**AOB**

Christian asked how many fixtures for the EMCMs need to be built. We agreed on 8 additional ones.