

## Minutes of WP-meeting 420

### Attendance:

Zoom: Ritsuya Hosokawa, Jochen Kaminski, Claus Kleinwort, Kohei Oikawa, Huirong Qi, Ron Settles, Jan Timmermans

### General News:

Huirong had attended the ICHEP2024 and reported from it. There were about 1000 people, 300 talks and 400 posters. Huirong had given two presentations: One on the TPC for ILC and one on the TPC for CEPC, which were both received well. In addition Huirong showed two more interesting presentations from the ICHEP: the first on by Roberto Di Nardo

([https://indico.cern.ch/event/1291157/contributions/5892393/attachments/2900046/5085412/ICHEP2024\\_Prague\\_CEPC\\_TPC\\_IHEP\\_Huirong\\_20240719.pdf](https://indico.cern.ch/event/1291157/contributions/5892393/attachments/2900046/5085412/ICHEP2024_Prague_CEPC_TPC_IHEP_Huirong_20240719.pdf)), which discusses a Micromegas pad readout for high rates. Particularly interesting is the gas mixture Ar:CF<sub>4</sub>:i-butane 88:10:2), which shows a very high drift velocity and lower transverse diffusion, but needs quite a high electrical field ( $E_{\text{drift}} > 450 \text{ V/cm}$ ), which would result in an cathode voltage well above 100 kV. Several people doubted, that a TPC could be safely and stably operated at these conditions. The second presentation was by Shion Kubota ([https://indico.cern.ch/event/1291157/contributions/5893301/attachments/2899086/5084586/ICHEP\\_Qpix\\_ShionK.pdf](https://indico.cern.ch/event/1291157/contributions/5893301/attachments/2899086/5084586/ICHEP_Qpix_ShionK.pdf)) on a pixelated readout of a lArTPC for solar, supernova and beam studies. They are developing a dedicated ASIC called Q-Pix, with a new data taking scheme, which is measuring only the time until a fixed charge is collected.

Finally, Huirong also mentioned a study to use a bipolar wire grid (static voltage) to reduce the IBF. It was presented during a CPAD meeting. Currently, the groups want to study the track distortions because of the bipolar grid. They are using a GridPix detector for this study.

Huirong was asked about any news on the CEPC: The project follows the current timeline to complete the physics and detector TDR: on September 1<sup>st</sup> the structure of the document will be reviewed by an international panel. This will take place before the CEPC conference. Then the writing will start and the document should be finished before the final review end of this year/beginning of next year at the Hong Kong University.

Jan mentioned, that there was an interesting discussion on the ILD contribution to the European Strategy discussion during the ILD-CM on the last day of the LCWS. Please have a look at the slides of Ties (<https://agenda.linearcollider.org/event/10411/contributions/55115/attachments/39835/62953/ILD%20EPSU.pdf>).

### News from the groups:

Jan said, that the paper on the spatial resolution of the pixelTPC has been submitted to NIM A. A second one is in the process with  $dE/dx$  vs.  $dN/dx$  and efficiency measurements and angular dependence of the spatial resolution.

### AOB:

The next workpackage meeting will take place on August 22<sup>nd</sup>.