

US BELLE2: SUPERKEKB COMMISSIONING DETECTOR Project

Quarterly Report

September 2011

Project Management (Vahsen)

Developed plan with cost estimates for proposed US contribution to SuperKEKB commissioning detector. Incorporated in US Belle2 WBS as tasks 1.7 (Commissioning Detector) and 2.7 (Commissioning Detector Assembly/Installation/Construction). KEK has now decided on commissioning strategy – final focusing quadrupoles and Belle solenoid magnets will be present during commissioning detector operation. WBS is consistent with this new plan and the updated Belle2/SuperKEKB schedule.

Recruited two new graduate students (Seong and Hedges) to work on commissioning detector.

Working with Shuji Tanaka (KEK) on recruiting contributions to commissioning detector from other Belle2 institutions. First Belle2+KEKB joint commissioning detector meeting to be held during November 2011 Belle2 general meeting.

Simulation (Jaegle)

Jaegle is integrating SRIM/GEANT/MAGBOLTZ and other software into a root-based TPC full simulation framework. We expect to interface this with Belle2 background simulation.

R&D (Vahsen, Jaegle, Seong, Thorpe, Hedges)

First GEM+Pixel TPC prototype constructed at University of Hawaii. Thorpe currently commissioning / calibrating charge gain in GEM stage. See Figures 1 and 2.

Acquired CF252 and polyethylene shielding to construct collimated neutron source. Construction ongoing. To be used to verify performance of TPC with fast neutron detection.

Retired LBNL engineer who was supposed to re-design TPC-compatible PC board for ATLAS FE-I4 pixel chip may not be able to complete this task, due to software incompatibilities.

Looking for another EE at PNNL or SLAC to perform this work. Does not yet affect schedule.

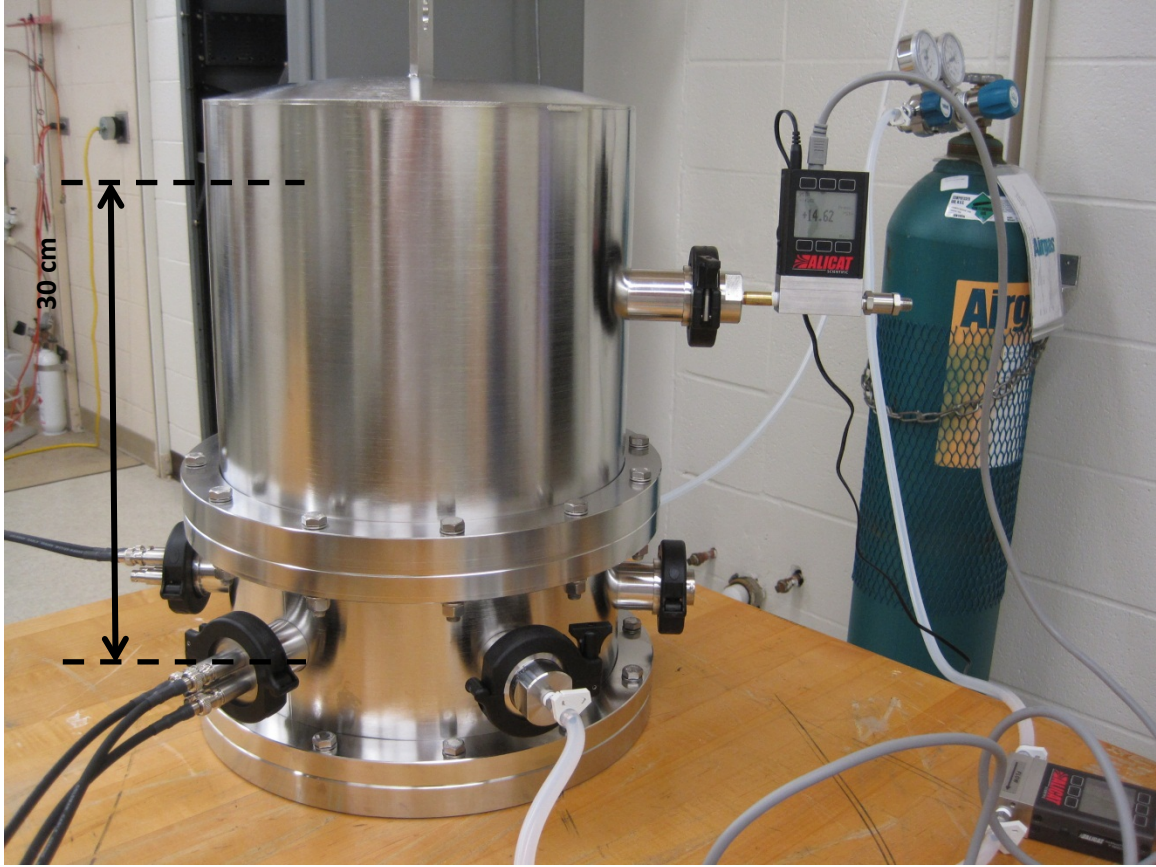


Figure 1: Vacuum chamber containing TPC prototype.

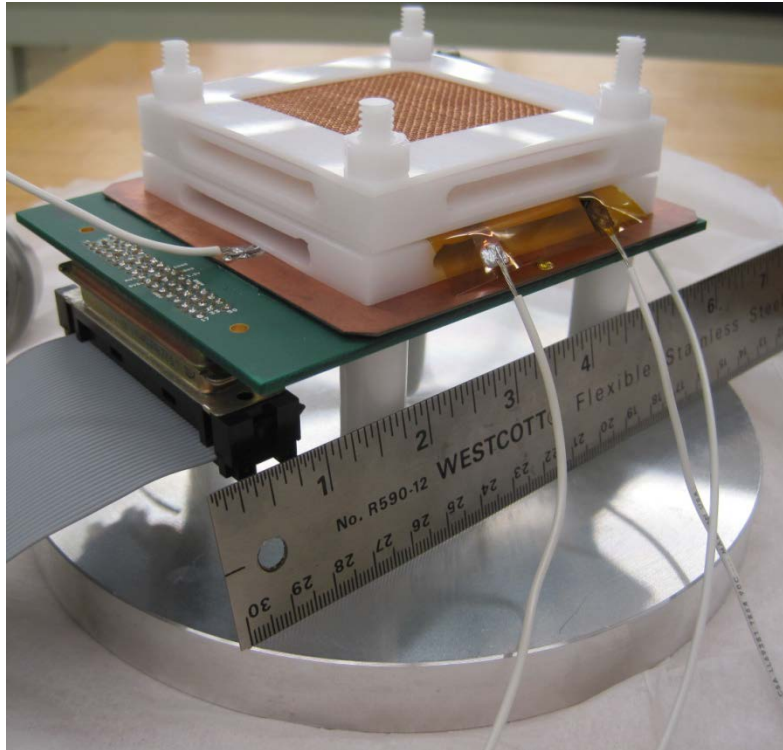


Figure 2: Photo of mechanical support structure with Gas Electron Multipliers (orange, transparent foil) and Printed Circuit Board (green) with Pixel Chip installed.