TRD studies with spare package in the fall 2015 run

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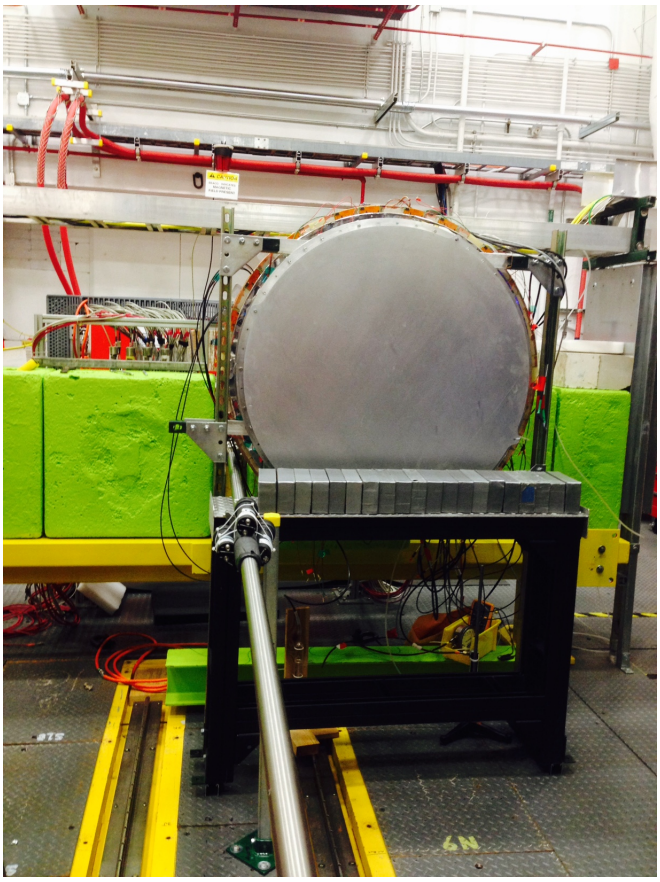

Figure 1: Spare package installed on the platform behind the pair spectrometer

The spare FDC packagae has been installed on the platform behind the left (north) arm of the pair spectrometer (Fig.1). It will be used in the fall 2015 run as a prototype of a Transition Radiation Detector (TRD). Additional lead brick shielding was erected behind the package to cover the opening in the shielding in front of the package. The package is installed in such a way that it doesn't obstruct possible extraction of the target and work at the upstream end of the

magnet, neighter it blocks the pssage to the platform from the north side. The gas is supplied from a pre-mixed bottle located at the floor right under the detector. For the studies we will use 192 channels with three fADC125 modules inserted at the left side of the Start Counter (ST) VME crate. The HV and LV supplies come from extra channels/modules in the FDC/CDC supplies.

The two upstream cells of the spare pacakge have been modified by increasing the thickness of the spacer ring from 0.5 cm to 3.5 cm. In addition, the upstream cathode of the most upstream cell has been removed to avoid the photon absorption from the copper. As a result the drift gap of the two cells were increased to 3.5 and 4 cm resulting in a drift time up to 9 μsec with a gas mixture of 90/10 Ar/CO_2. Therefore, the trigger coming to the ST crate will be delayed additionaly in the TI by about 6 μsec to accomodate for the longer drift times. It means, however, that (for this run only) the ST and the spare package can't be read out at the same time.

Measurement plan:

1.