

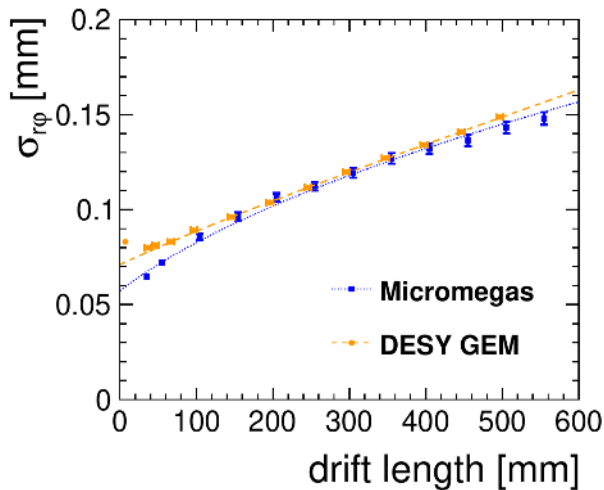
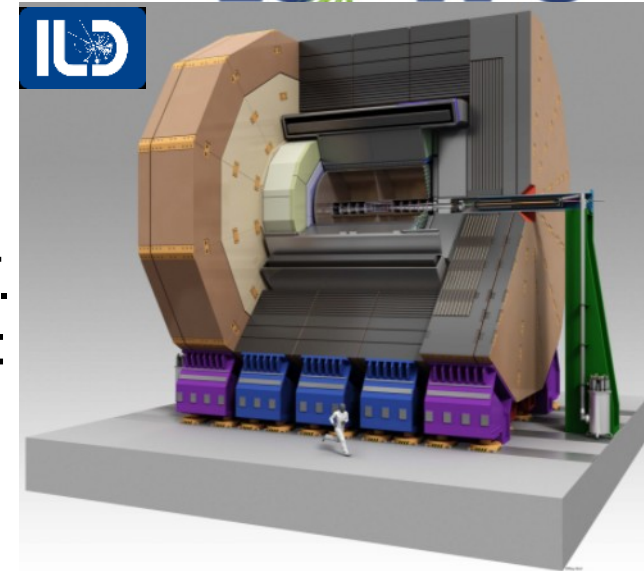
TPC Development for the ILD



The International Large Detector (ILD) was originally developed for ILC, but is now studied for more Higgs factories (ILC, CEPC, FCCee).

The central tracking detector is a large TPC (length: 4.5m, outer radius: 1.8m) to be operated in $B = 3.5$ T. LCTPC-collaboration studies various MPGD readouts:

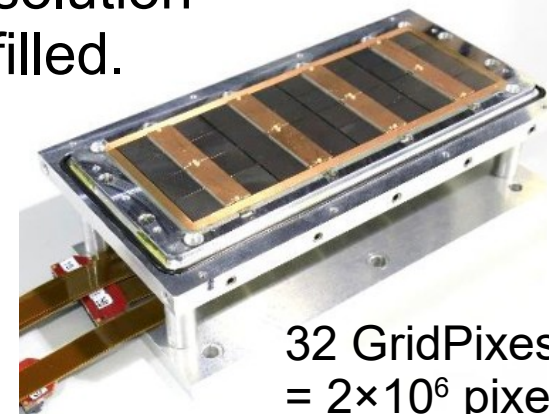
GEMs, Micromegas, GEMs with double thickness, GEM + MM stack and GridPixes.



Pad-based readouts show a very similar performance in tracking, dE/dx and double track resolution. ILD-requirements for momentum resolution ($\partial(1/pt) \sim 10^{-4} / \text{GeV}/c$) can be fulfilled.

Pixel-based readout gives lower occupancy, better dE/dx res., no angular pad effect, etc.

LCTPC is planning on intensifying its simulation efforts to evaluate also other applications of its detectors.



32 GridPixes
= 2×10^6 pixels