

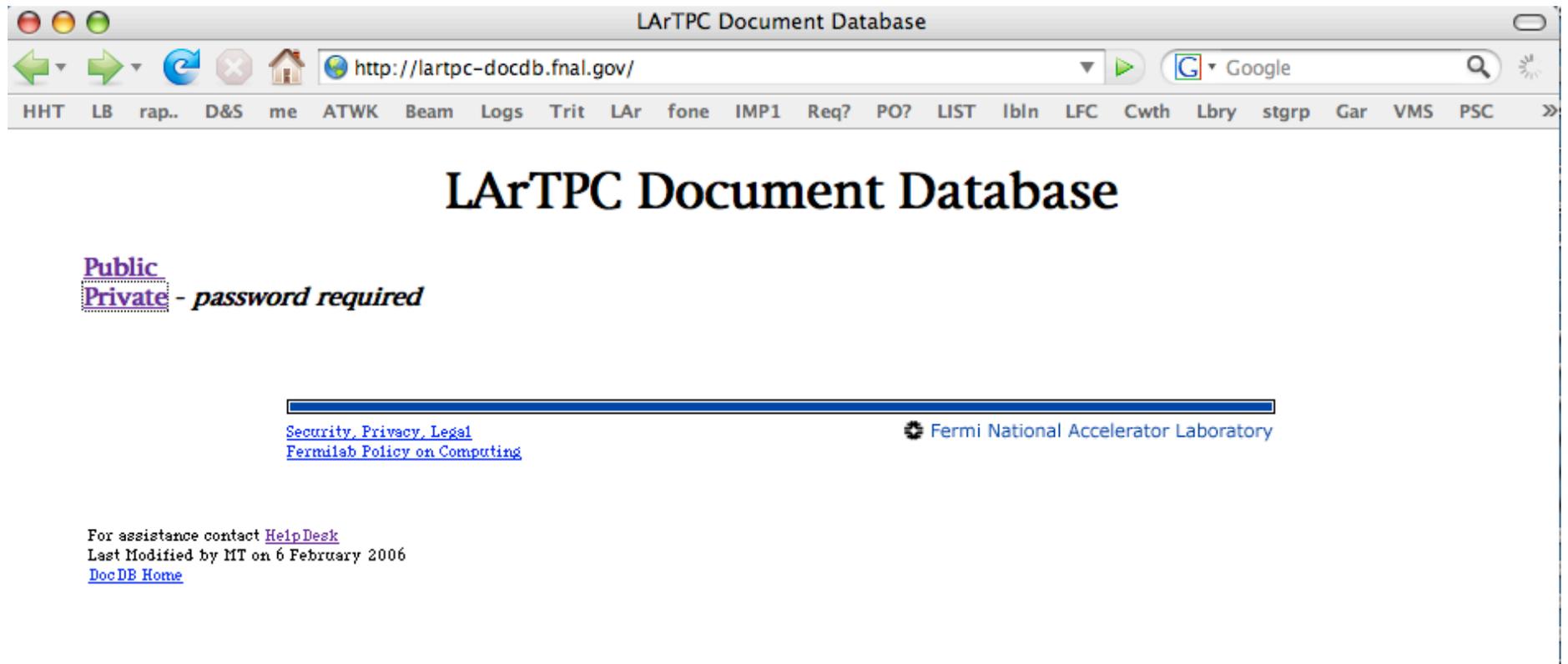
'Purity Monitor'

Features:

Measures electron drift lifetime (function of E field?) (few %)

Self-calibrating:

Can determine drift-velocity (at E-field of PrM), and so sensitive to Temperature (fraction of a K).



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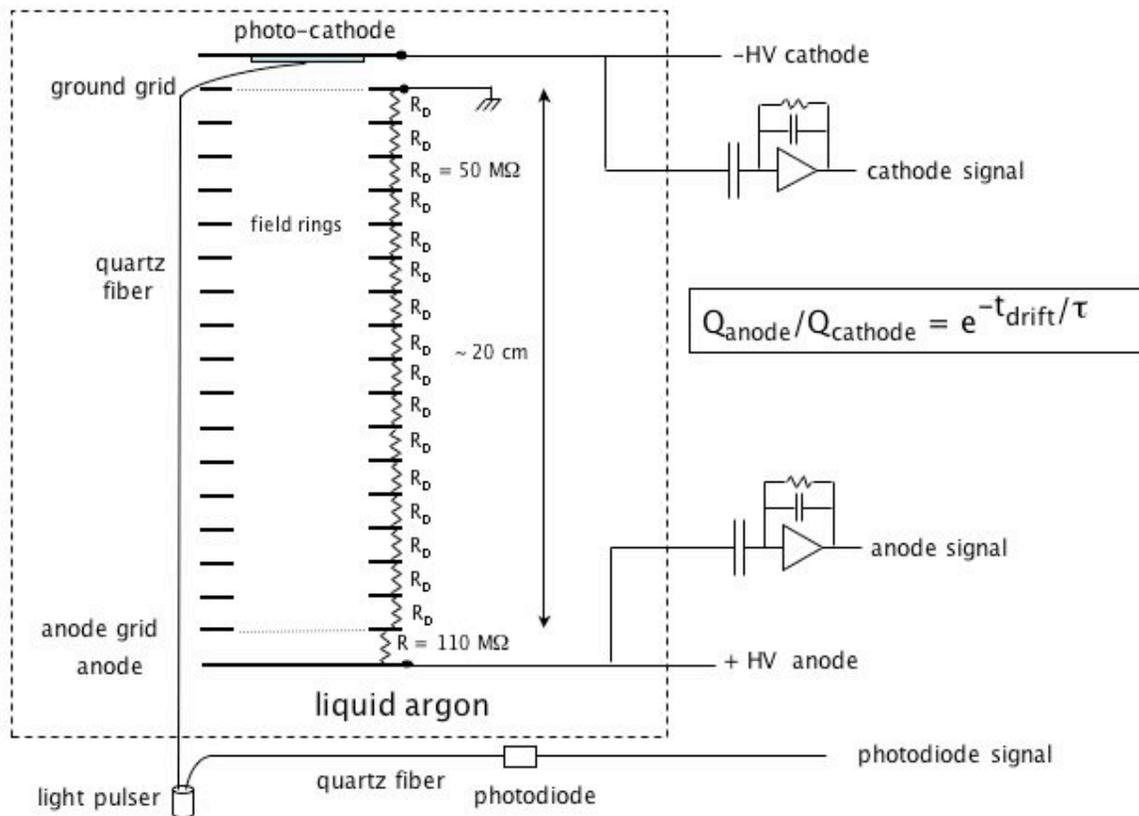
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Schematic of Liquid Argon Purity Monitor (PrM)



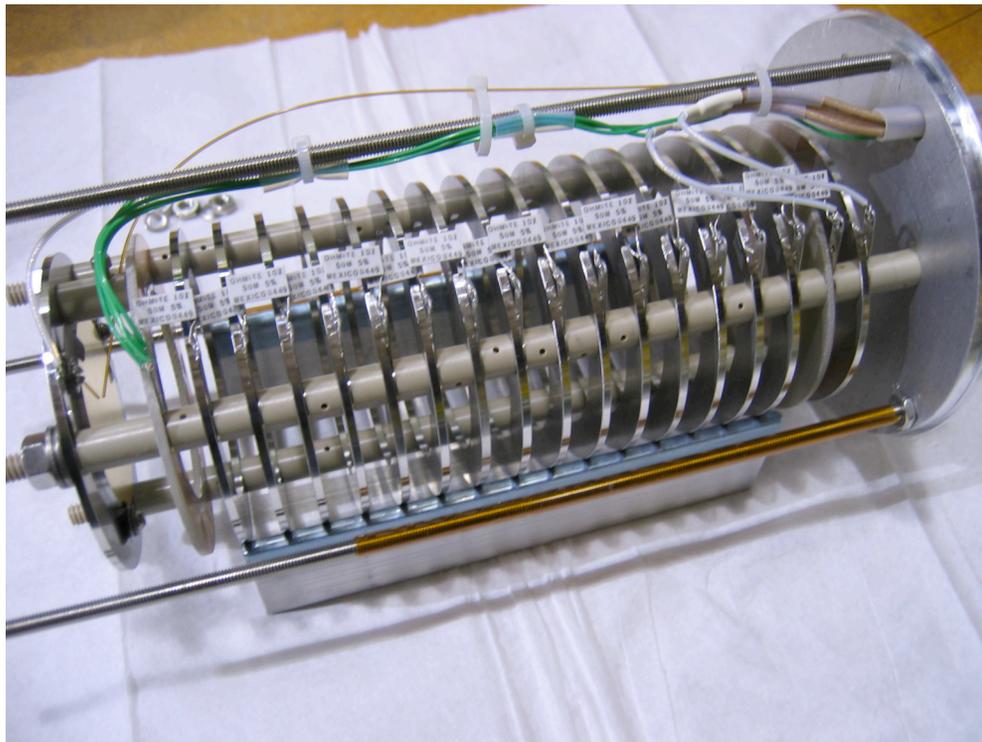
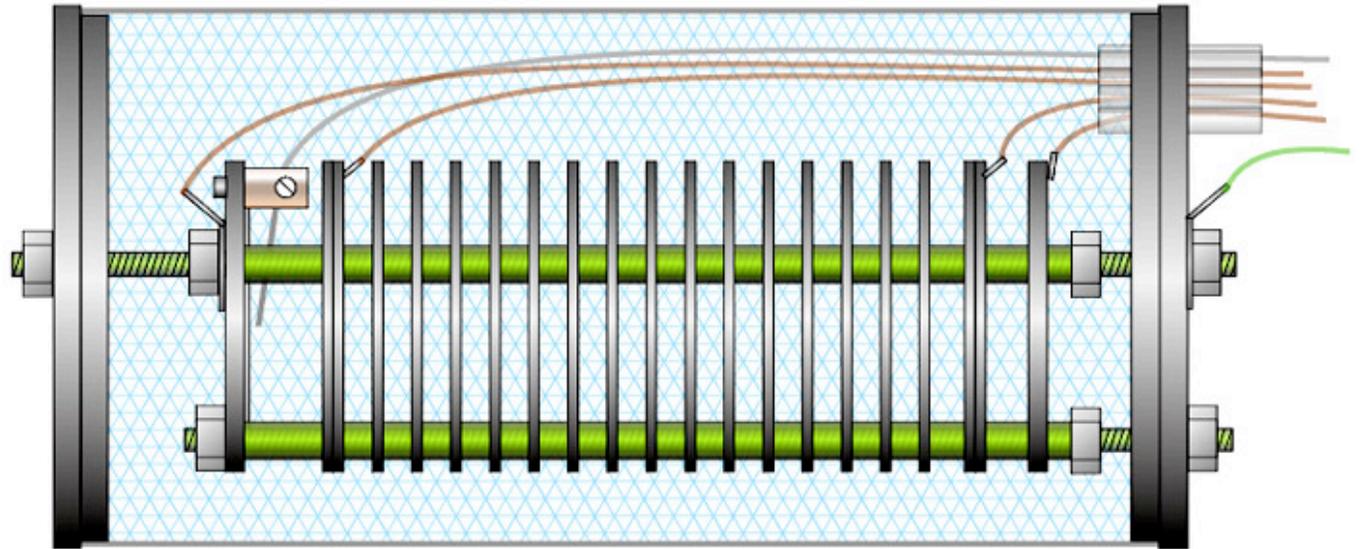
2/5/06

1st Good Signal in Liquid, 2/3/06

1

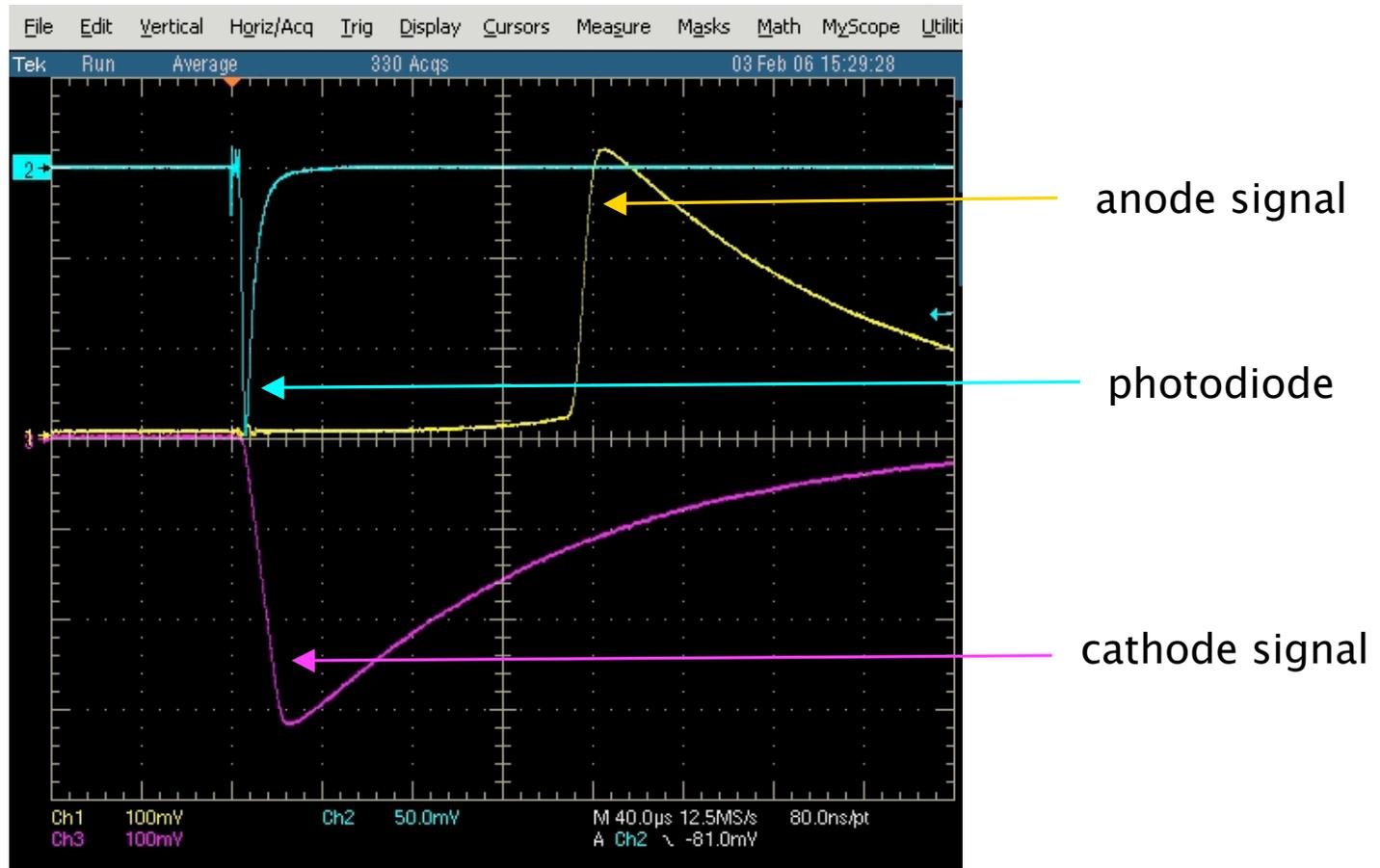
Measure 't', infer τ

PrM drawing

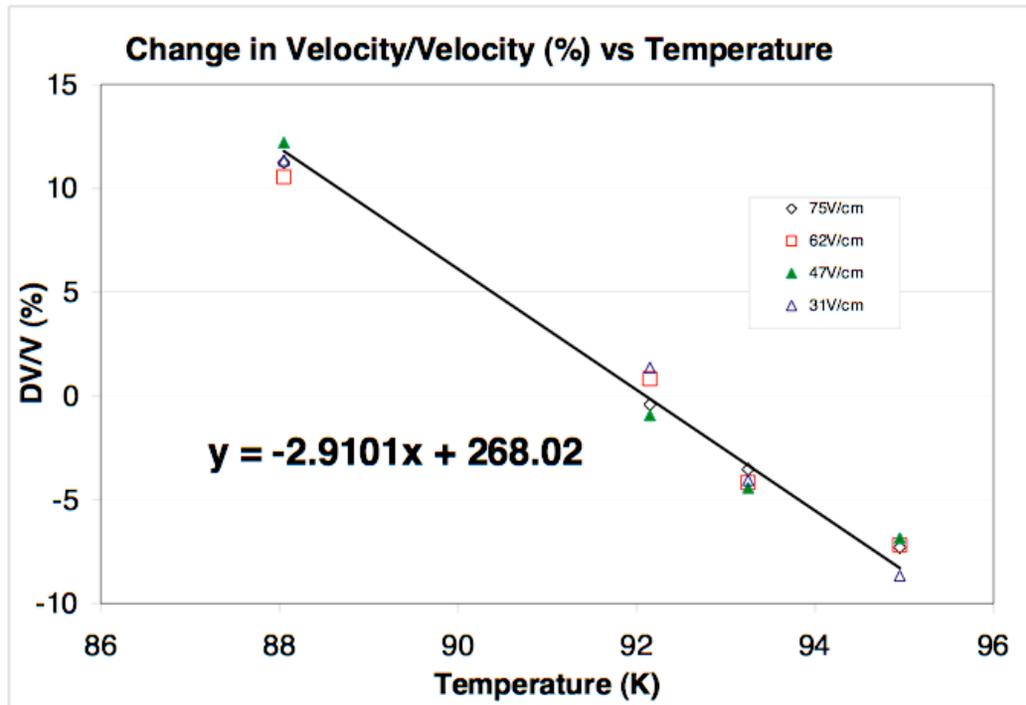


C.Kendziora2/3.05

PrM photograph



$$t_{\text{drift}} = 150 \mu\text{s}, Q_{\text{anode}}/Q_{\text{cathode}} = \sim 1$$



10/2007

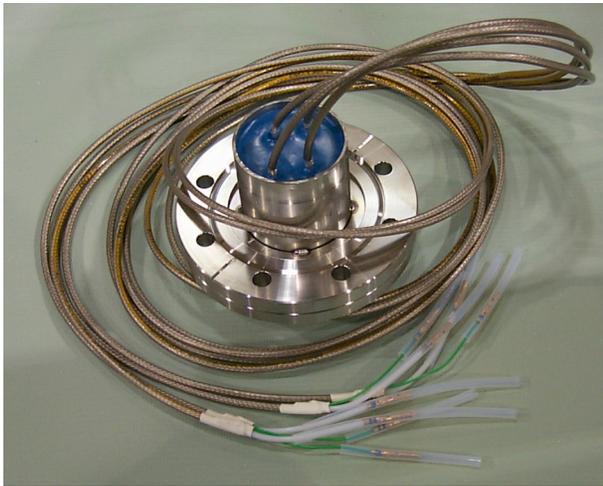
sensitivity to temperature

Issues:

do not know long term (years) photo-cathode sensitivity

requires non-solarizable quartz fibers, $\lambda \sim 1$ meter

how many? (reliability, and spatial variations in liquid)



feedthrough (for Jack)