Preliminary Micromegas Data Analysis Results

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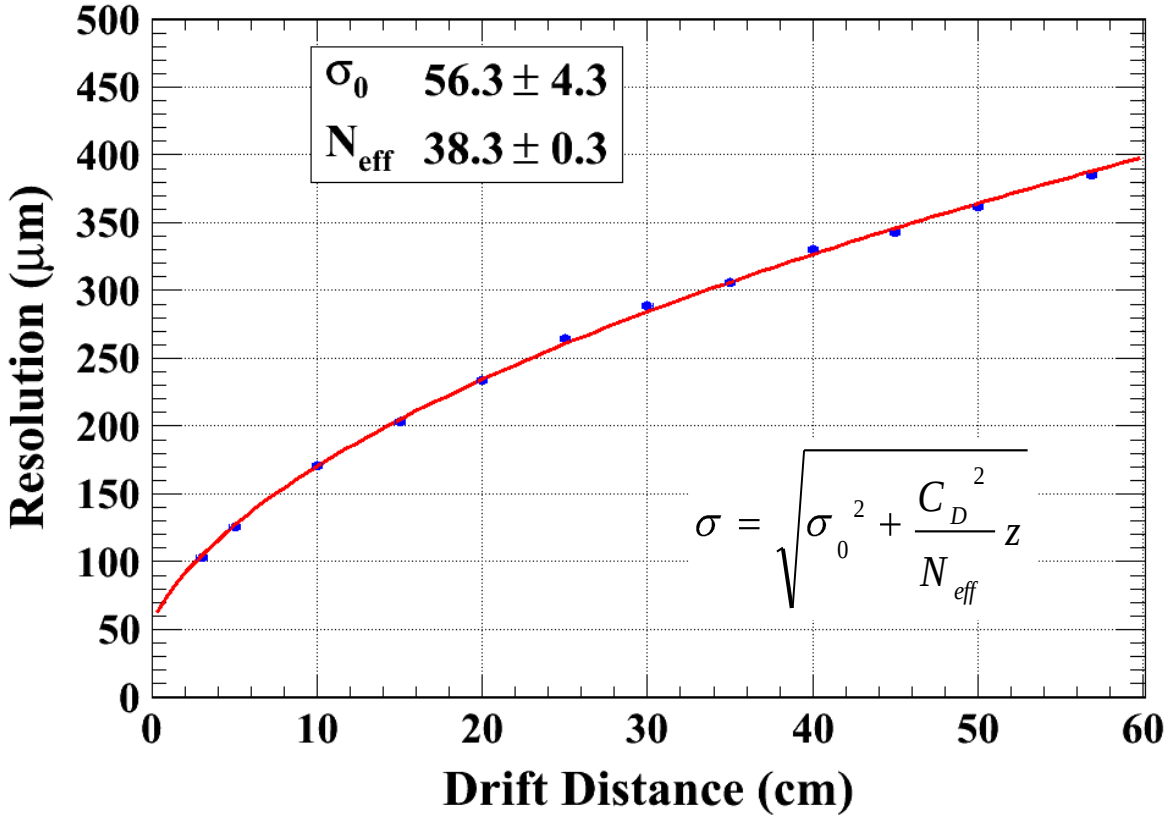
Detector modules

Preliminary Data Analysis Results (B=0)



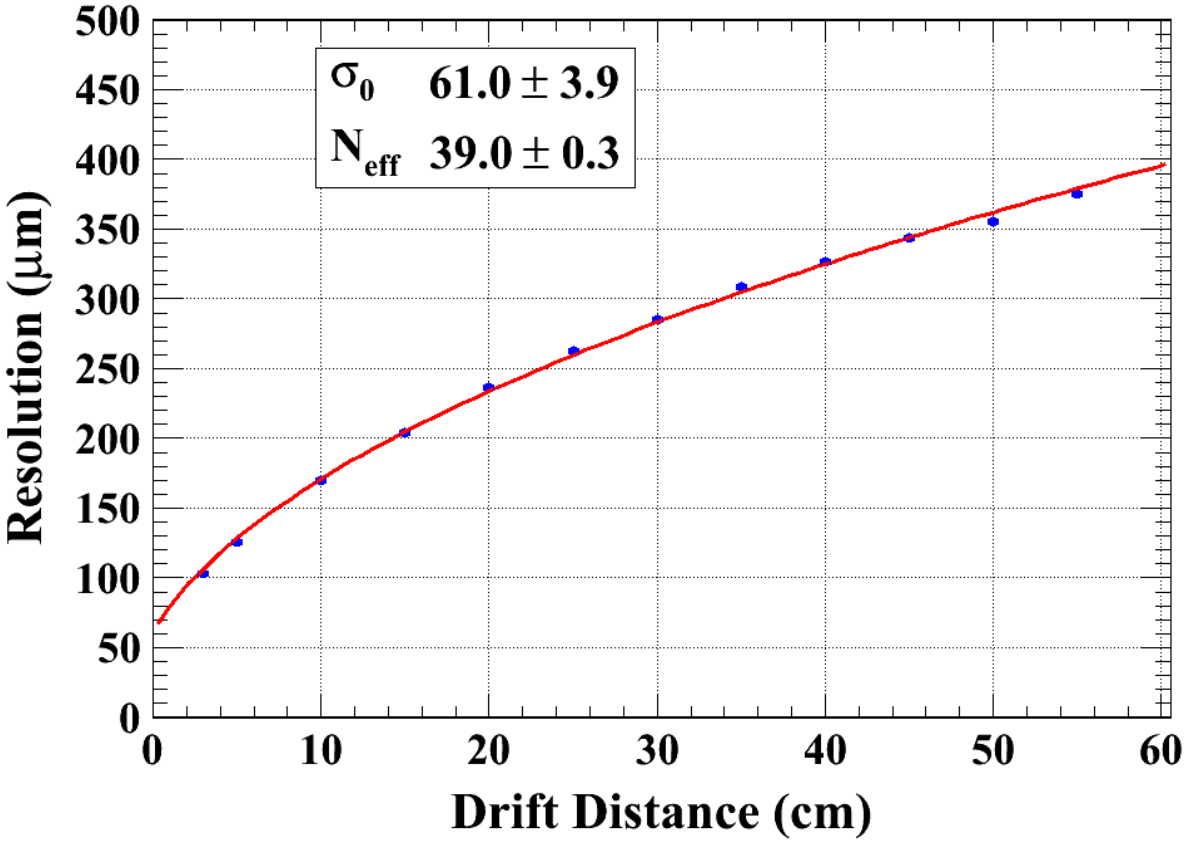
Module_4

χ^2 /Ndf = 15.7 / 10

Peaking time = 200 ns

V_{mesh} = 381 V

Preliminary Data Analysis Results (B=0)



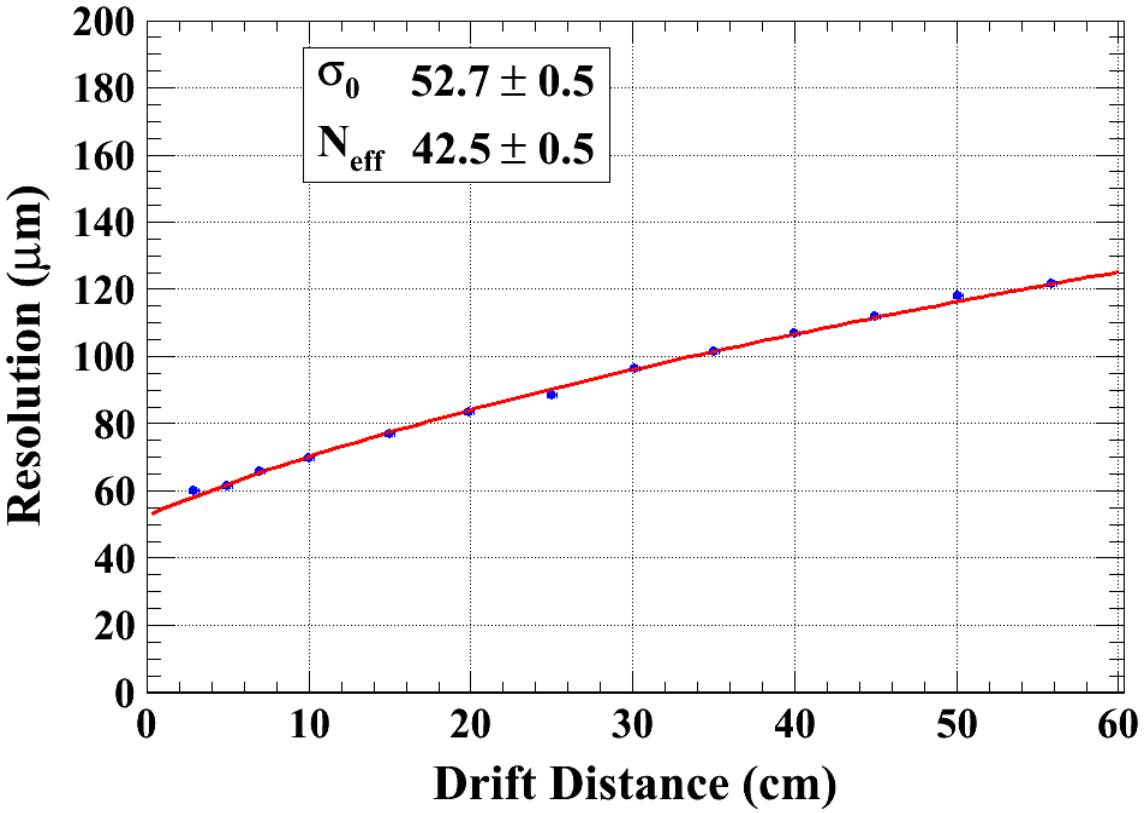
Module_5

χ^2 /Ndf = 13.6 / 9 (removing the point d=50cm)

Peaking time = 200 ns

V_{mesh} = 381 V

Preliminary Data Analysis Results (B=1)

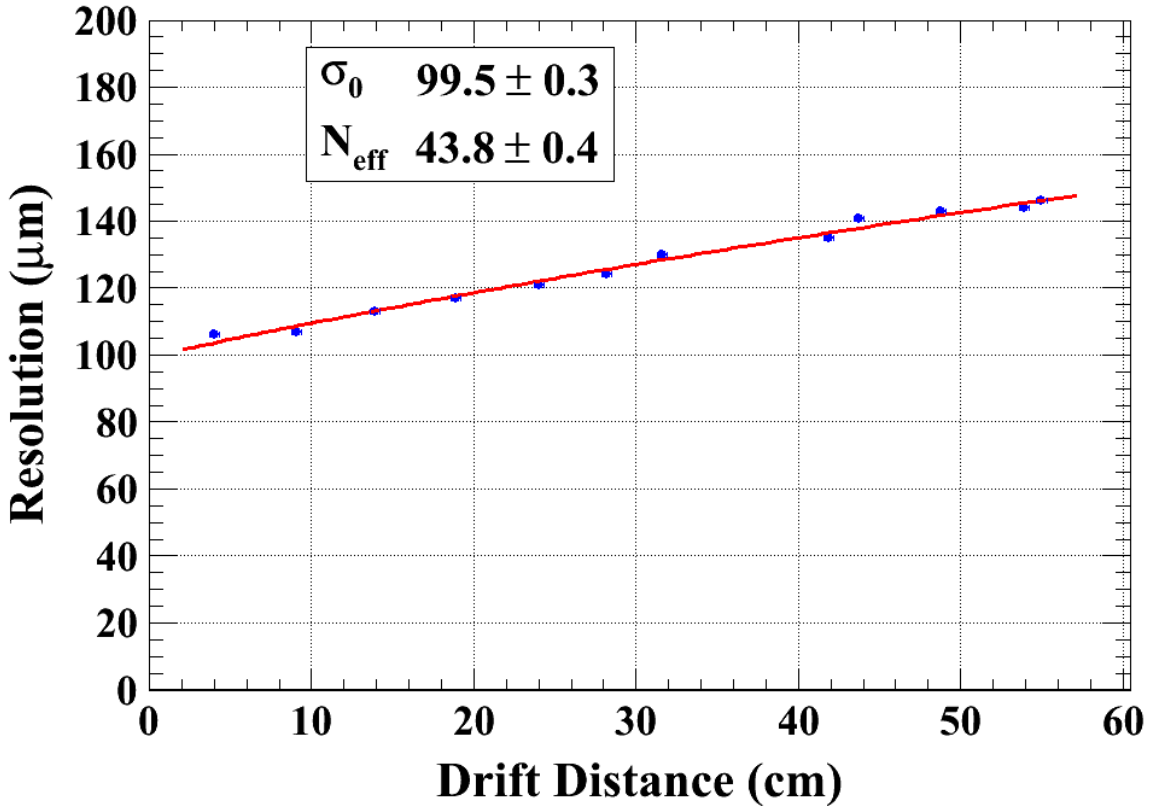


Module_CLK

Peaking time = 500 ns

V_{mesh} = 380 V

Preliminary Data Analysis Results (B=1)



Module_INK

Peaking time = 500 ns

V_{mesh} = 380 V

- Last year December and this year March, four modules were tested without or with magnetic field respectively. Among these modules, two modules which were tested without magnetic field last year, were made by same material (resistive Kapton of ~ 3 MΩ/□)with different routings. Two modules which were tested with B=1T this year, were made by resistive Kapton of ~5 MΩ/□ and resistive ink of ~ 2 MΩ/□ respectively. The preliminary analysis results of resolution are shown as follows:

	Magnetic field	Peaking time	Resolution	N_{eff}
Module_4 resistive Kapton of ~ 3 MΩ/□	B=0T (December 2009)	200ns	56 μm	38.3
Module_5 resistive Kapton of ~ 3 MΩ/□			61 μm	39
Module_CLK resistive Kapton of ~ 5 MΩ/□	B=1T (March 2010)	500ns	53 μm	42.5
Module_INK resistive ink of ~ 2(?) MΩ/□			100 μm	43.8

Expected : Neff = 47.7 * $\langle G \rangle^2 / \langle G^2 \rangle$. Leads to (too?) high values of θ

Systematics?

- Maybe information from neighbouring rows increases artificially Neff, but this would introduce a correlation between neighbouring rows : not observed (skipping 2 lines every 3 does not change Neff measurement)
- Neff is stable with cuts
- At B=1 T, uncertainties from B (assumed to be 0.98 T) and C_D