ME1/1_GIF and ME2/1 chamber performance at GIF++ with muon beam&source May 2017, test40, HV0

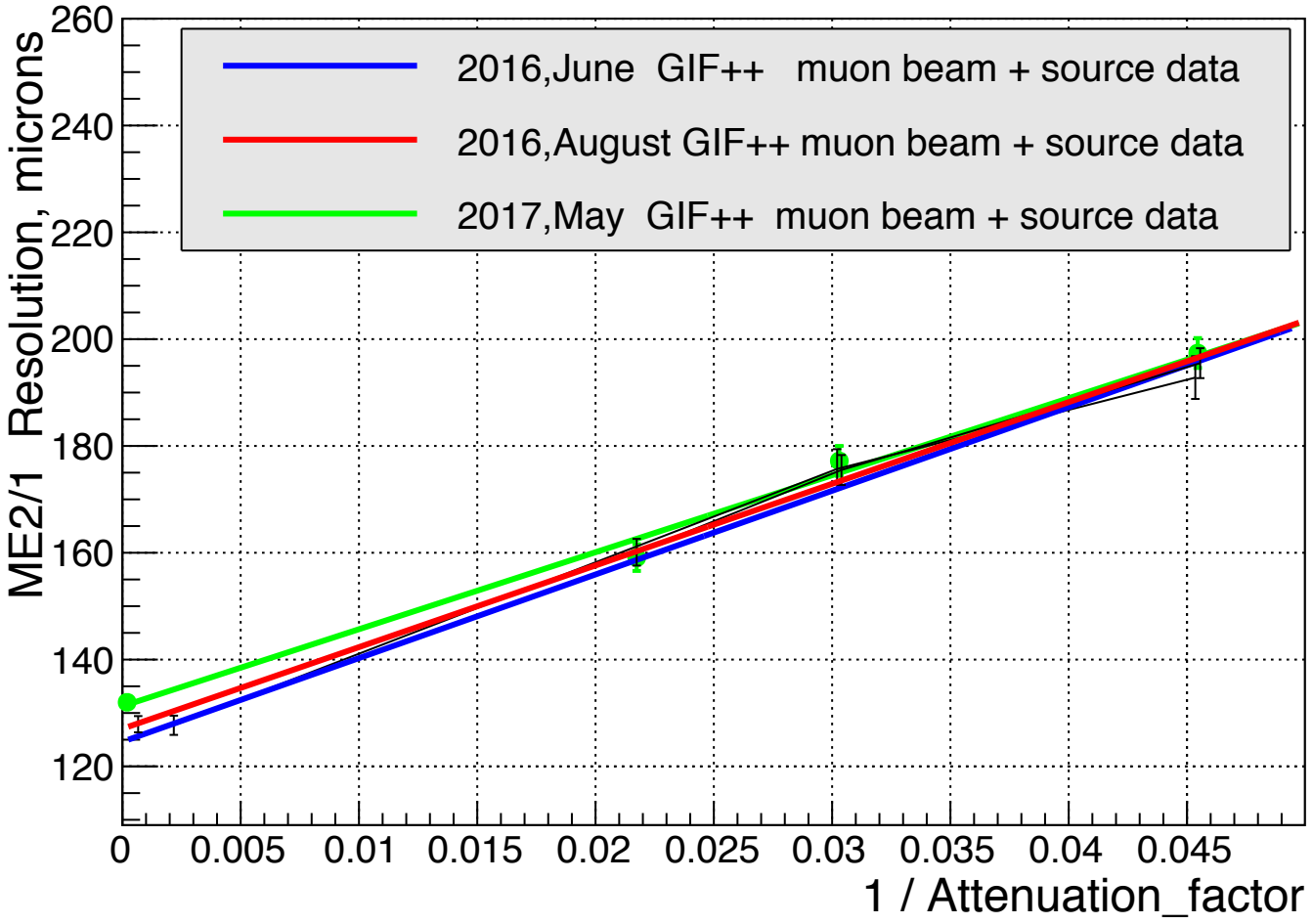
Vladimir Palichik
(Dubna-JINR)

GIF++ CSC working meeting
May 30, 2017

Runs TB (May-2017) No source, Att. Factors 22*, 33* and 46*

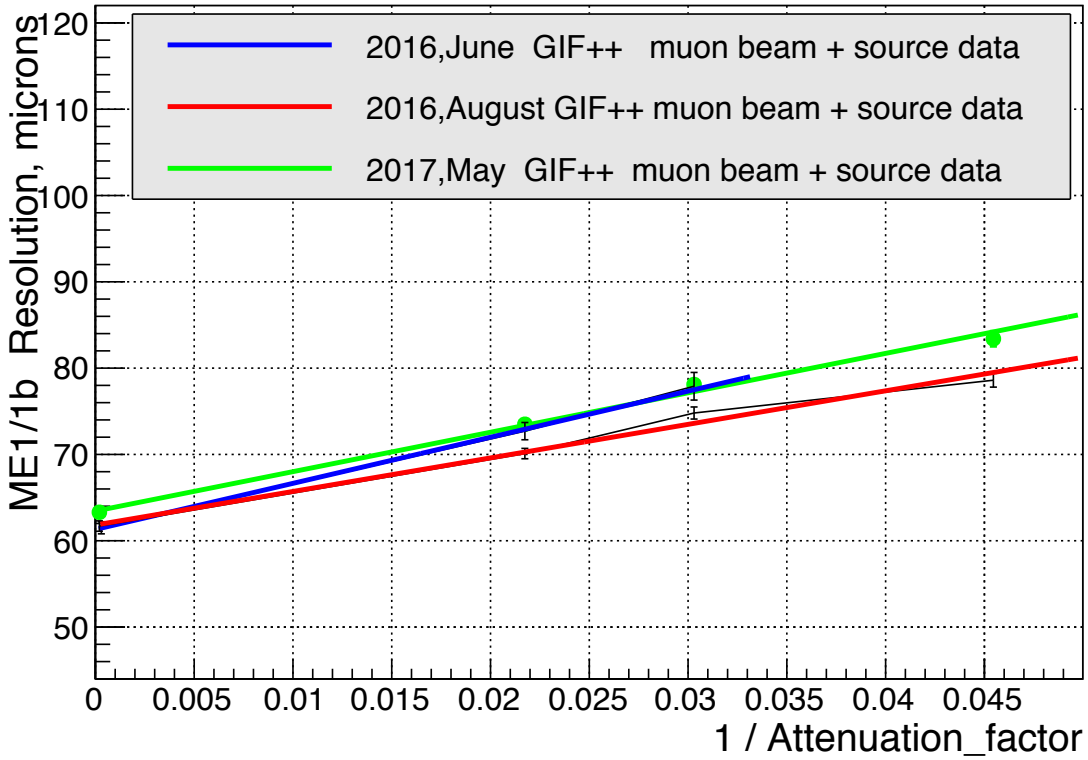
1 M# 3789 **Source=OFF, PGIF++=952 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_091027_UTC.raw
3. M#3782, Att. **100**/(3.3) , **951 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_034230_UTC.raw
4. M#3772, Att. **69**/(4.6) , **950 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_011617_UTC.raw
5. M#3766, Att. **46**/(10), **949 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170511_231615_UTC.raw
6. M#3774, Att. **33**/(4.6), **950 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_014426_UTC.raw
7. M#3780, Att. **22**/(3.3), **951 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_030309_UTC.raw
8. M#3786, Att. **15**/(22), **951 mbar**
emugif2.cern.ch:/raid/data/current/csc_00000001_EmuRUI01_STEP_40_000_170512_043948_UTC.raw

GIF++ ME21 Resolution test40, HV0, 2016-2017 data

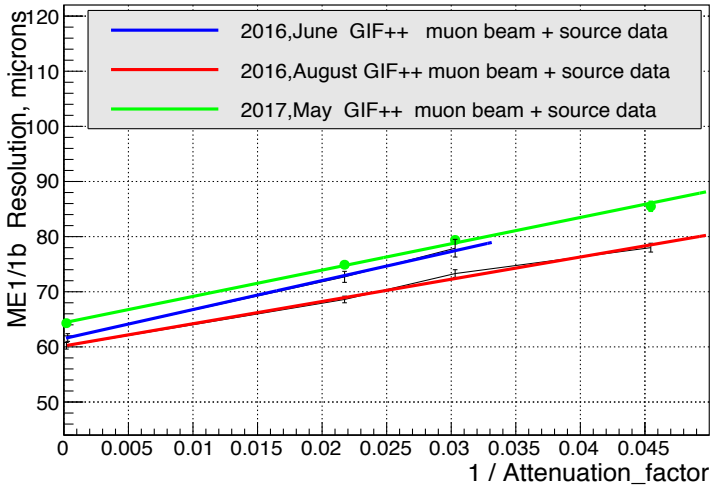


Resolutions are normalized to atm.preassure 960mbar

ME11b_gif Resolution, test40, HV0, 2016-2017 data



Resolutions w/o correction to atm.preassure



Resolutions are normalized to atm.preassure 960mbar

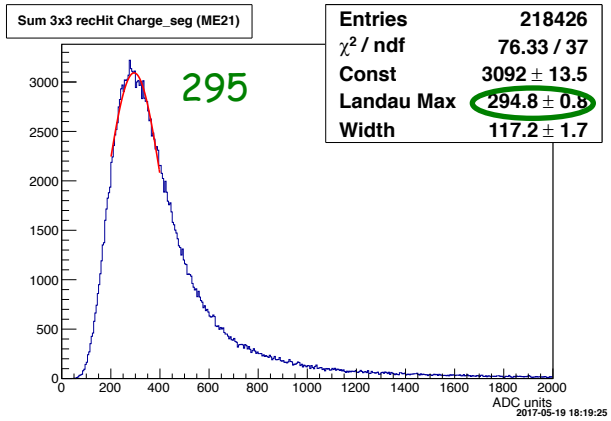
Gas Gain, test40, Source OFF, HV0, 2016-2017 data

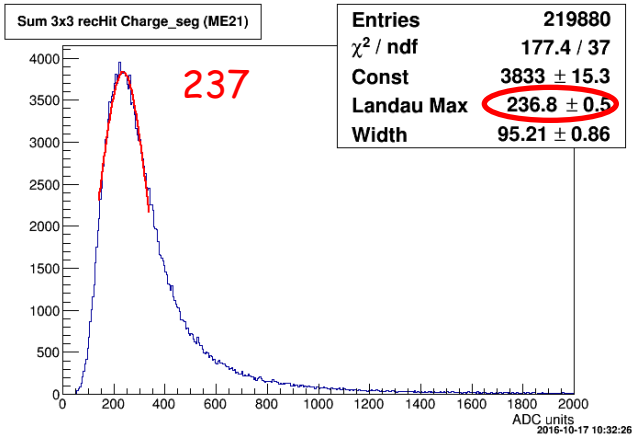
August, 970 mbar

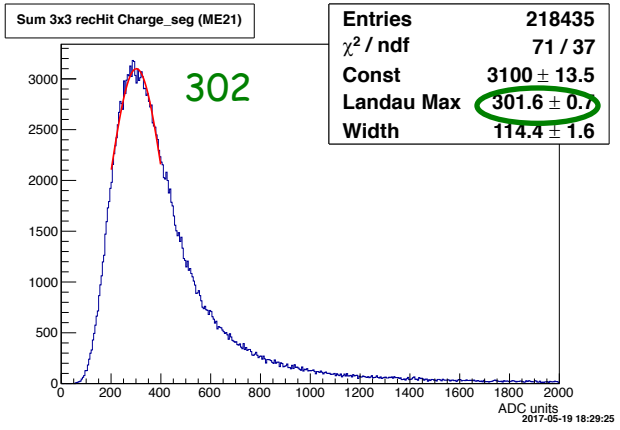
October, 960 mbar

May 2017, 952 mbar

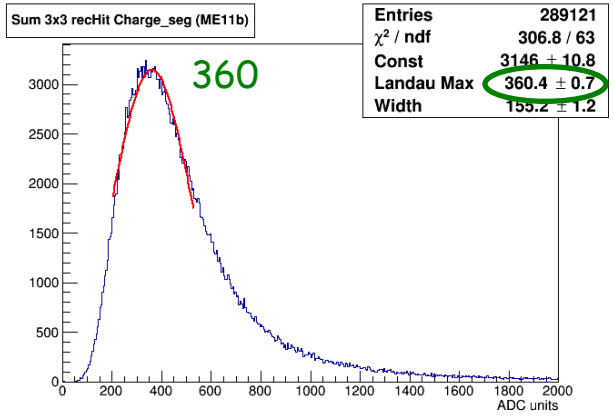
ME21

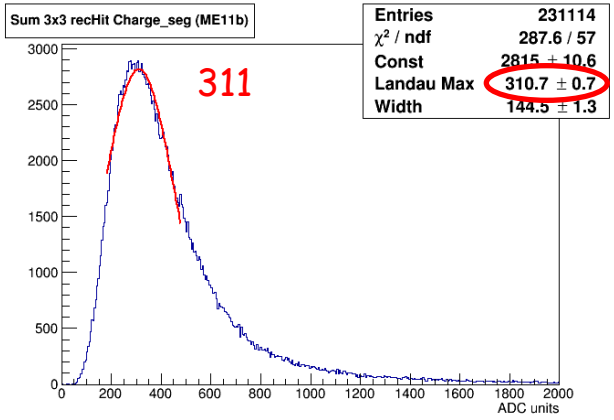


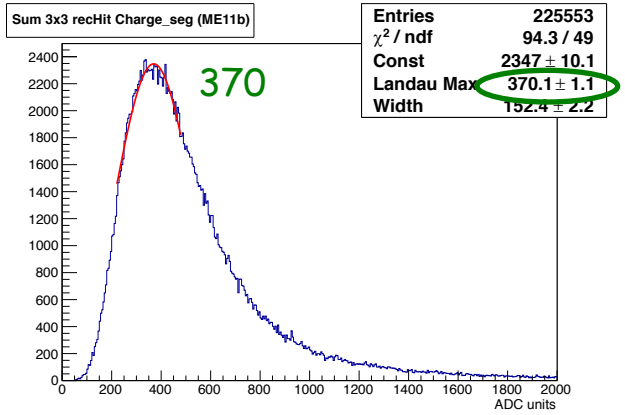




ME11b

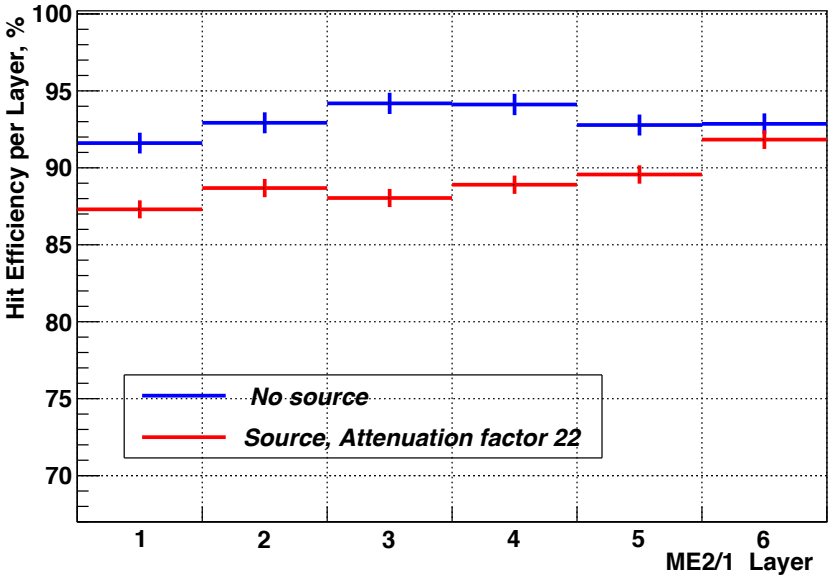




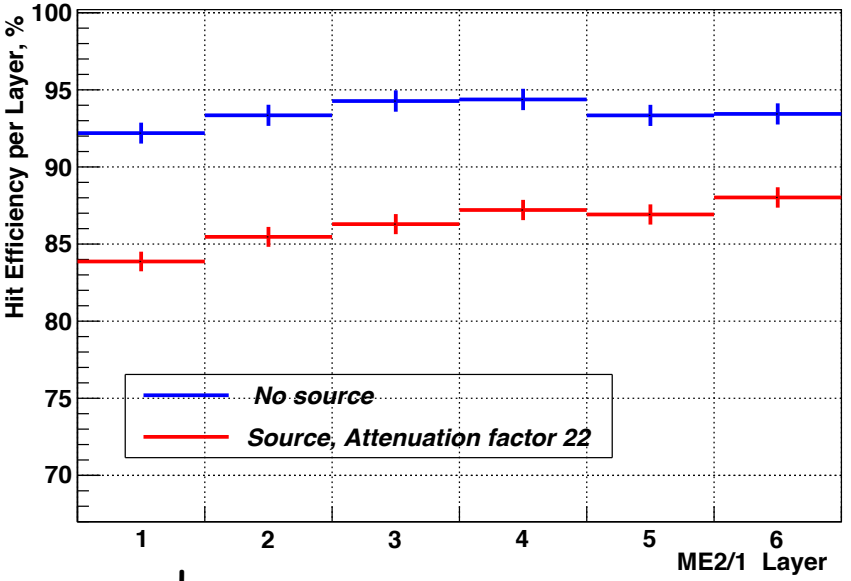


ME21 RecHit Efficiency (test40, HV0, Gif++ data)

August 2016



May 2017



Aver.efficiency per layer

No source

93.1%

93.5%

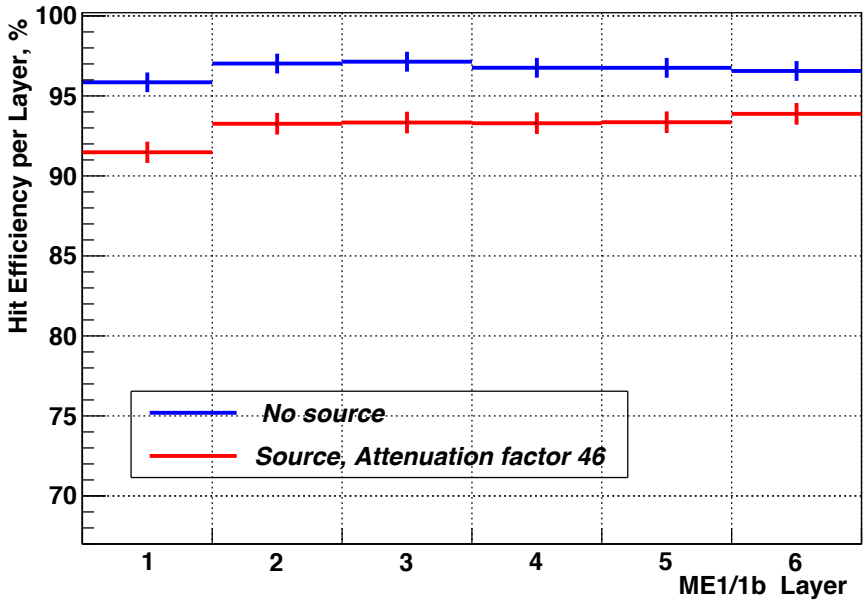
Source, Att22

89.0%

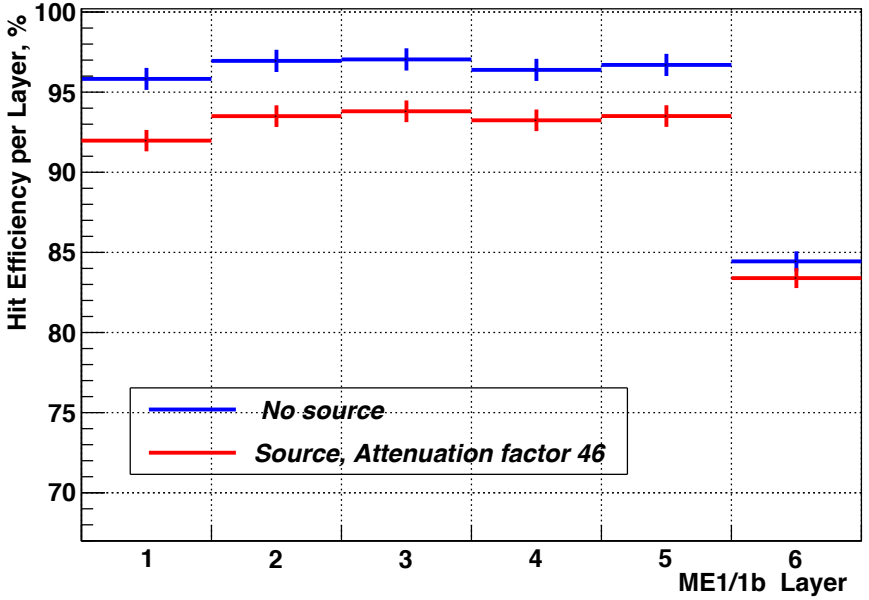
86.3%

ME11b RecHit Efficiency (test40, HV0, Gif++ data)

August 2016



May 2017



Aver.efficiency per layer

	No source	Lay 1-6	Lay 1-5
	96.7%	94.6%	96.6%
Source, Att46			
	93.1%	91.6%	93.2%

Conclusions

- ME1/1_GIF and ME2/1 RecHit efficiency and spatial resolution were studied with 2016-2017 GIF++ TB data;
- GIF++ tests show that for HL-LHC luminosities (5e34 – 7e34 Hz/cm^2) spatial resolution degrades by ~10-15% in ME1/1 and by ~40-50% in ME2/1 chambers;
- No degradation in efficiency with accumulated dose observed.