Second Arm Simulation

Akio Kiyomichi

April 30, 1996

Momentum reconstraction

1. Setup of Chamber

Install material in GEANT ; Figure 1
Geometry and Resolution

	Pad Chamber	Streamer Tube
Dimention	$120 \times 85 \times 0.0082$ cm	$139.3 \times 127.5 \times 0.5$ cm
Resolution	$\Delta x = 0.02$ cm	$\Delta x = 0.4$ cm
	$\Delta y = 0.4$ cm	$\Delta y = 0.8$ cm
material	Wire (Fe)	Plastic

Target ; uniform distribution in circle with a radius of 3mm

2. Simulation

Chamber Efficiency ; 100 %
Particle ; π^+
Magnetic Field ; 2 Tm in Homogenious

3. Result

Momentum resolution vs p

- difference of gas ; Figure 2
- Physical effect at Vac. bag ; Figure 3
- Physical effect at He bag ; Figure 4

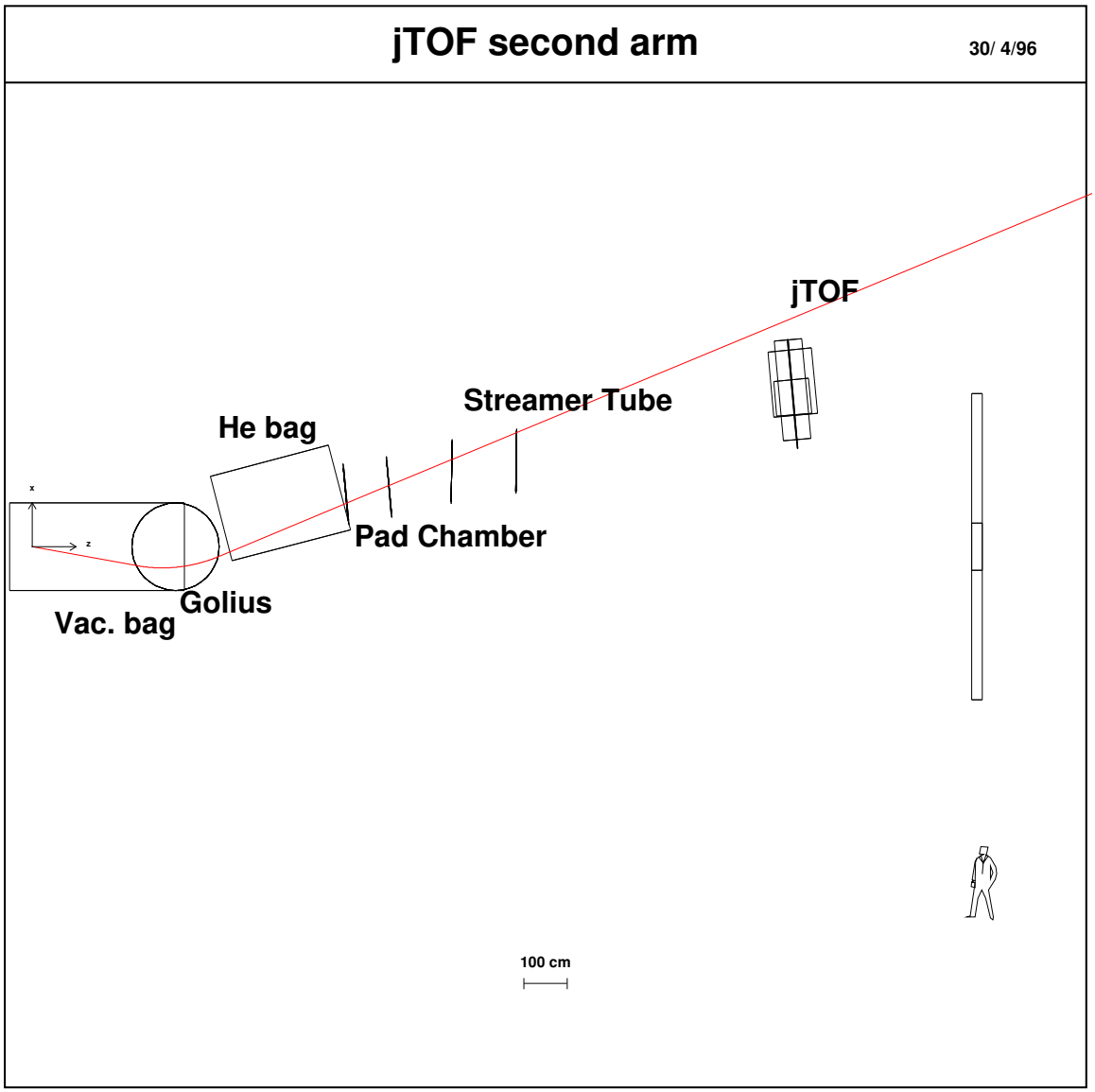

Figure 1: Install material in GEANT

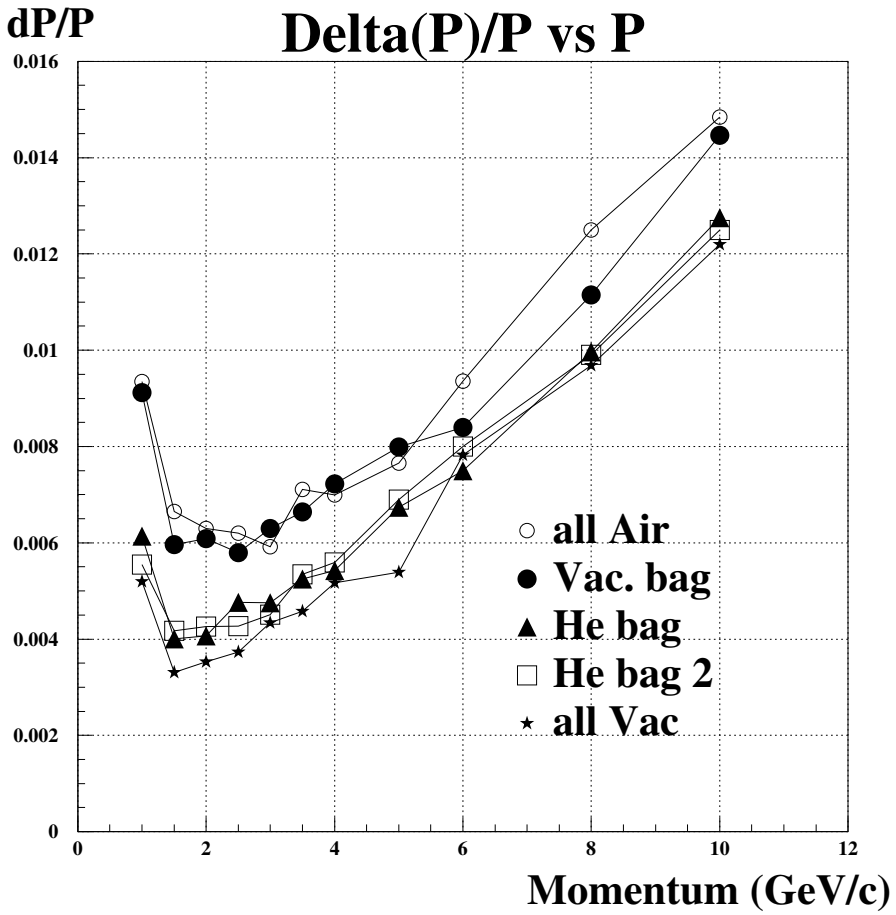

Figure 2: difference of gas

Multiple Scatterling	Chamber resolution	Target resolution
on	on	off

all Air

Vac. bag Vacuum bag between Target and Magnet

He bag Vac. bag & He bag between Magnet and Pad Chamber

He bag2 Vac. bag & He bag covering Pad Chamber and Stream Tube

all Vac

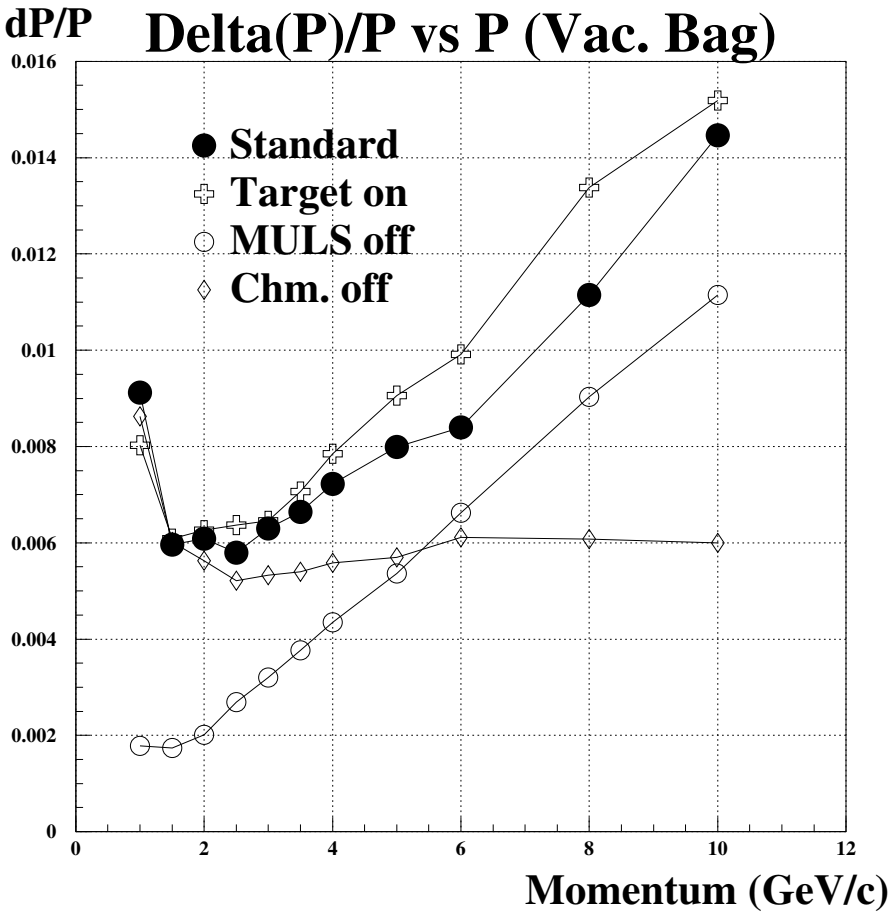

Figure 3: Physical effect at Vac. bag

	Multiple Scatterling	Chamber resolution	Target resolution
Standard	on	on	off
Target on	on	on	on
MULS off	off	on	off
Chm. off	on	off	off

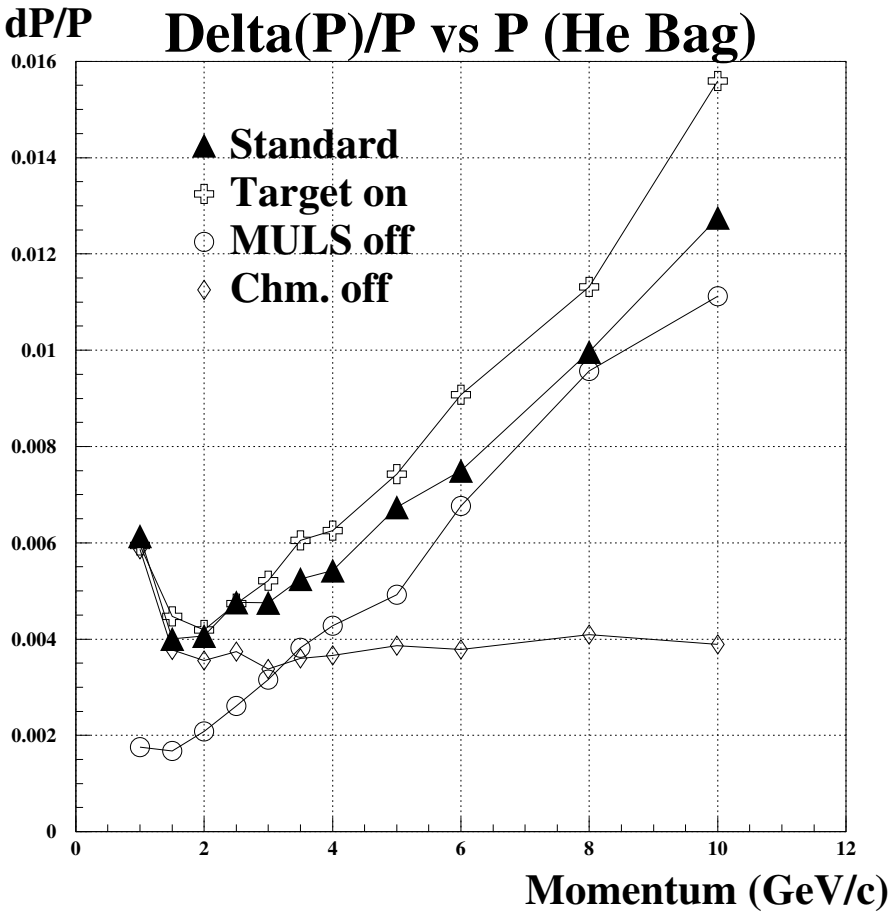

Figure 4: Physical effect at He bag

	Multiple Scatterling	Chamber resolution	Target resolution
Standard	on	on	off
Target on	on	on	on
MULS off	off	on	off
Chm. off	on	off	off