

On using plug in the absence of ECal for better muon identification for the first stage of SPD

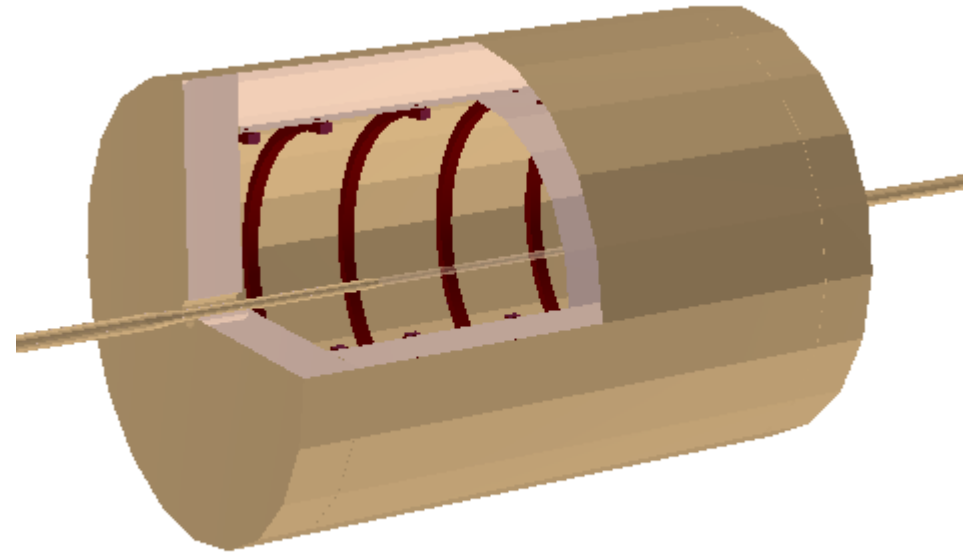
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Plug information

Material		Concrete
Thickness	Barrel	46.4 cm
	EC	45 cm



Barrel

Class	GeoType	V[m ³]	Mass[kg]	D[g/cm ³]	Prefix
SpdPipe	1	17.890934	42938.242706	2.400000	SPDPIPE
SpdPipe	1	4.334031	10401.675046	2.400000	SPDPIPE
SpdPipe	1	4.334031	10401.675046	2.400000	SPDPIPE
total:		26.558997	63741.592798		

Total plug

Endcaps

General information

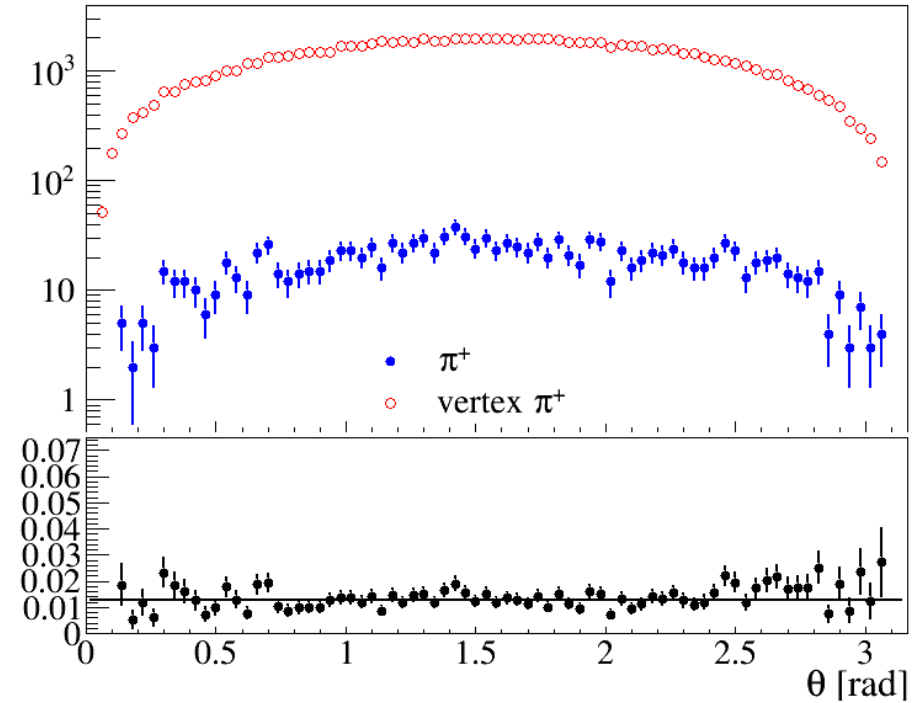
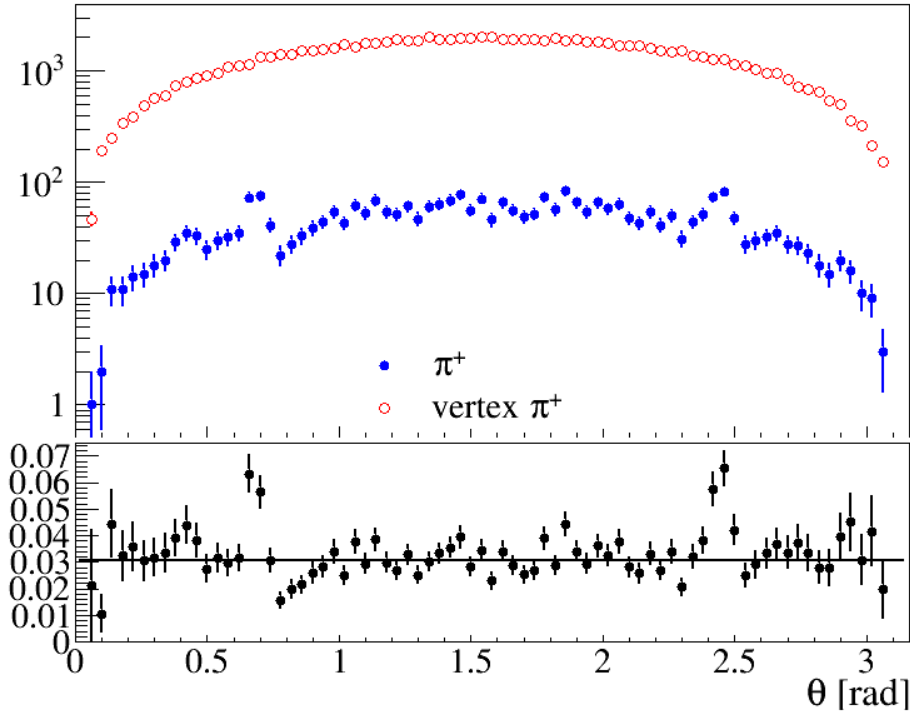
- Isotropic generator was used
- Muons and pions with energy equal to 1.5 GeV
- One particle in the event
- Theta angle [0, 180] degrees
- Phi angle [0, 360] degrees

Pions

Track length > 50

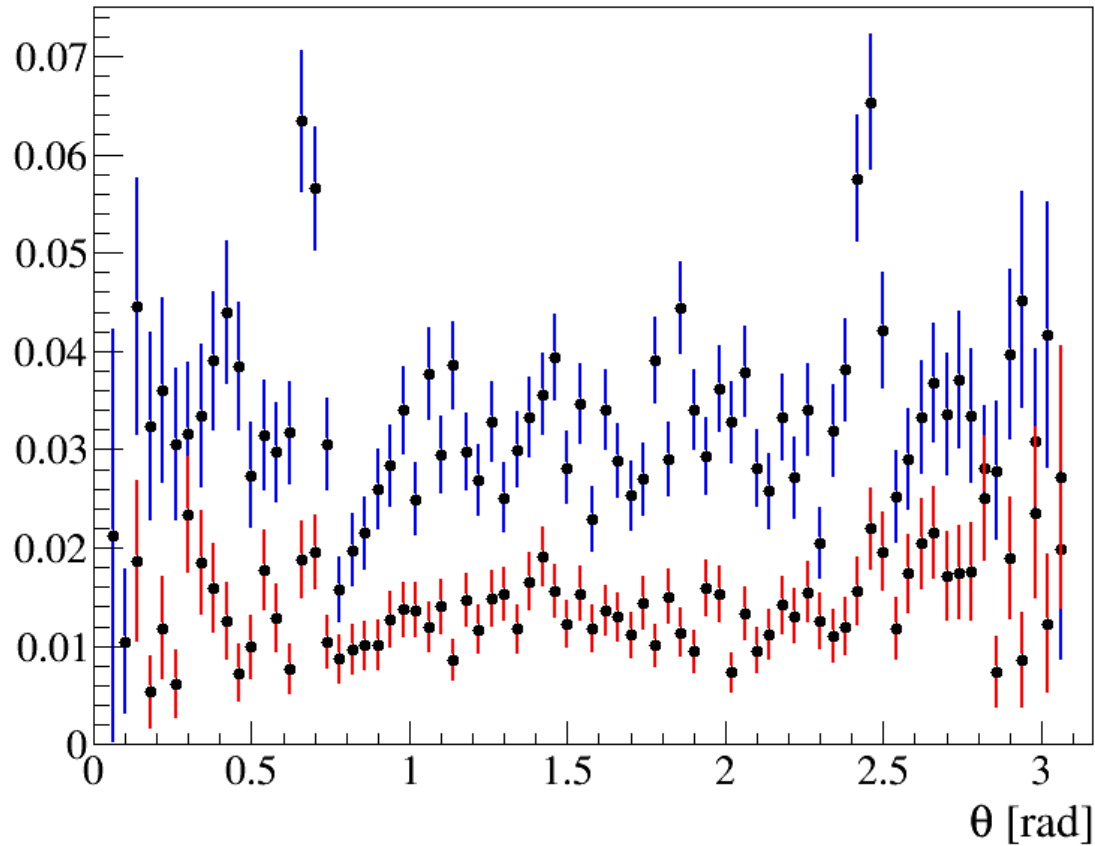
Before concrete plug

With concrete plug



	Without plug	With plug
Positive pion	$3.08 \pm 0.05 \%$	$1.26 \pm 0.04 \%$

Pions comparison



	Without plug	With plug
Positive pion	$3.08 \pm 0.05 \%$	$1.26 \pm 0.04 \%$