

INFO GENERALI

④ COORDINATA z VERTICE: DISTR. NORM. $\rightarrow \sigma = 5.3 \text{ cm}$

④ COORDINATE x, y VERTICE: DISTR. NORM. $\rightarrow \sigma = 0.01 \text{ cm}$

\rightarrow RAGGIO RING

④ BEAM PIPE BE: $R = 3 \text{ cm}$ $W = 0.08 \text{ cm}$

④ PMMA LAYER: $R = 4 \text{ cm}$ $W = 0.02 \text{ cm}$

④ SECOND LAYER: $R = 7 \text{ cm}$ $W = 0.02 \text{ cm}$

④ z RIVELATORI: $[-13.5 < z < 13.5] \text{ cm}$

\rightarrow PER PARTICELLE PRODOTTE IN $-\sigma \leq z_{\text{vert}} \leq \sigma$ L'ACCETTAZIONE È $-1 < \eta < 1$

④ SMearing DEL PUNTO D'IMPATTO: $(\mu_z = 0, \sigma_z = 0.012 \text{ cm})$
 $(\mu_{rq} = 0, \sigma_{rq} = 0.003 \text{ cm})$

COS'E DA FARE:

SIMULAZIONE: \forall EVENTO

1. GENERAZIONE GAUSSIANA POS. VERT.

$\rightarrow z_{\text{vert}} = \text{gRandom} \rightarrow \text{Gaus}(0., 5.3)$ // vert. pos. in cm

$x_{\text{vert}} = \text{gRandom} \rightarrow \text{Gaus}(0., 0.1)$

$y_{\text{vert}} = \dots$

2. GENERAZIONE DELLA ROUTE RICATA' DI PARTICELLE CAM CHE

$\rightarrow \text{mult} = (\text{gRandom}) \sim$ CON CONTENUTO SELEZIONATO AL RINTINE

3. GENERAZIONE DIREZIONE ASSOCIATA A OGNI PARTICELLA

(uniforme in azimuth - range - distribution angolare in pseudo rapidità)

4. TRASPORTO DELLE PARTICELLE

- INTERSEZIONE BEAM PIPE
- SCATTERING MULTIPLO (CON COMANDO ON/OFF)
- POSIZIONE IMPATTO SUI INVELOCI

--- IGNORE PAGE ---

Event (class) : Tobject

+ VERTEX
+ PARTICLE (TclowArray)

Particella (class) : Tobject *

+ DIRECTION
- UPDATE DIRECTION()

TclowArray PARTICLE = TclowArray ("Particella", n)

* IN ITS CONSTRUCTION A METHOD TO GENERATE DIRECTION BASED ON
DIFFERENT DISTRIBUTION SHOULD BE SPECIFIED

Random Generator (class)

CLASS TO GENERATE NUMBERS ACCORDING TO
ANY GIVEN DISTRIBUTION

MAIN CLASSES

SITUATION

- TIME_NAME (const char *)
- CONFIG_FILE (" " " ")
- + RUN_SIMULATION()

EVENT: Tobject

- VERTEX (struct ?)
- PART_ARRAY (TCloneArray)
- + PART_GENERATION(OPTION)
- + PART_TRANSFORM(DETECTOR)



RANDOM VERTEX INIT. W/ CONSTRUCTOR

DETECTOR

(for cylinders only)

- RADIUS
- WIDTH
- MULTIPLE_SCATTERING (bool)

RANDOM DISTRIBUTION GENERATOR ???

needed? → look up on ROOT documentation to see if there are better solutions

PARTICLE

- PHI
 - ETA / THETA
- } DIRECTION OF MOTION

CONFIG_FILE

→ How MANY DETECTORS (beam pipe included) int

DETECTOR 1

RADIUS double

WIDTH double

MULT-SCATT. bool

DETECTOR 2

...