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# REPORTE SEMANAL

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## Outline

- \* Asociación MC
- \* Variando cortes
- \* Variables de Forma

# Asociación Monte Carlo

En esta muestra  
tenemos 54,000 V0s

122 “candidatos”

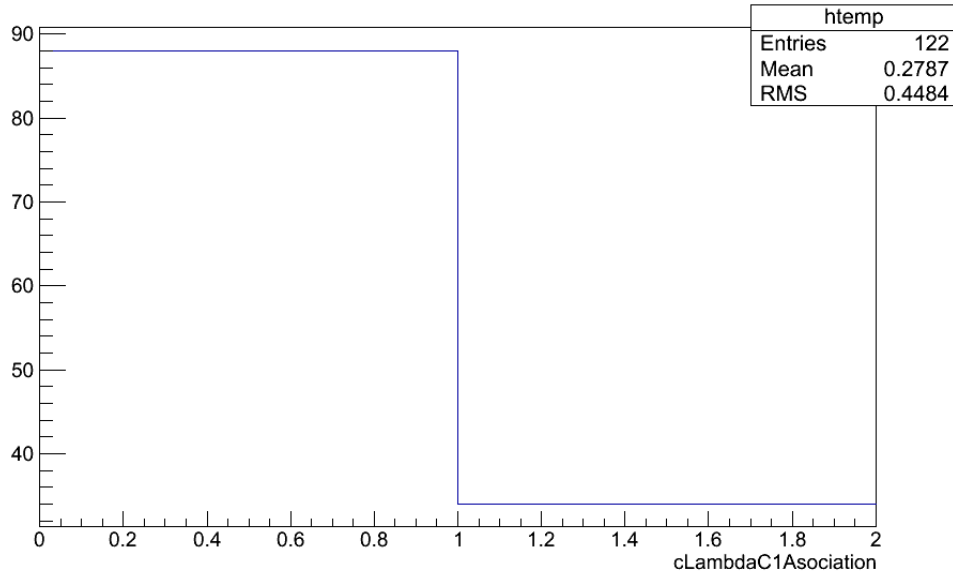
El 28% son Lambdas(34)

En esta muestra  
tenemos 1.394225E07  
V0s

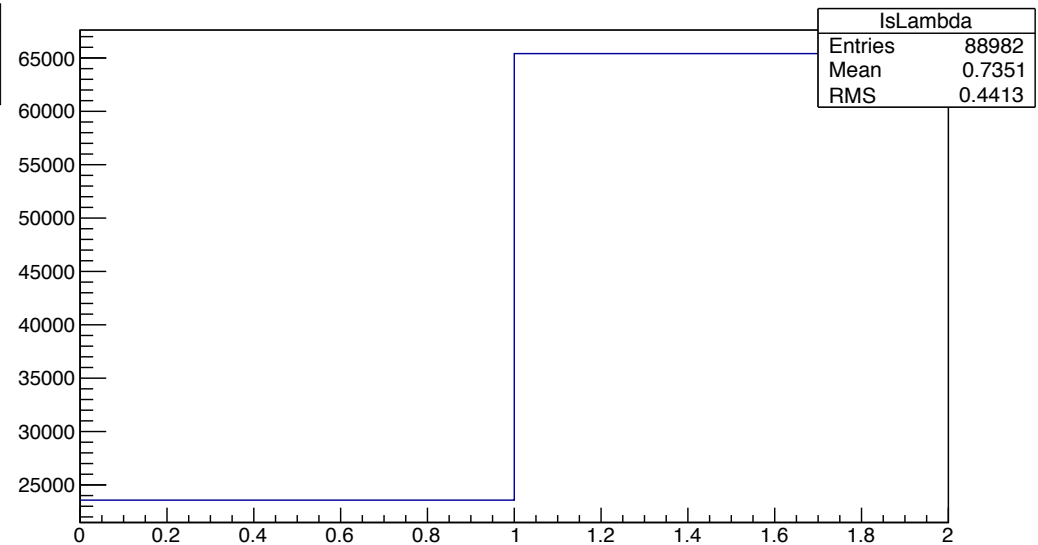
88982 “candidatos”

El 73.50% son  
Lambdas(65409)

cLambdaC1Asociation



cLambdaC1Asociation



Corrida 126408 del  
periodo LHC12d4c

Corrida 126404 del  
periodo LHC12d4c

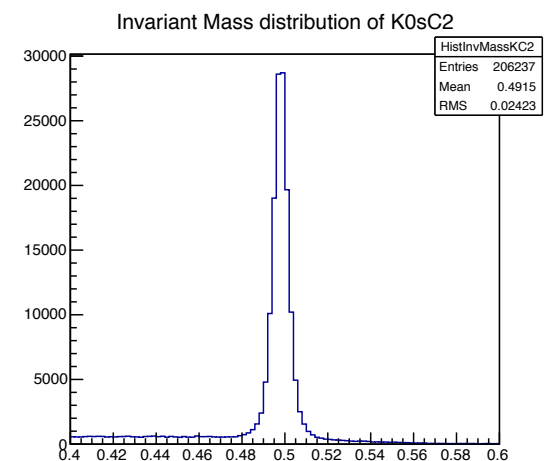
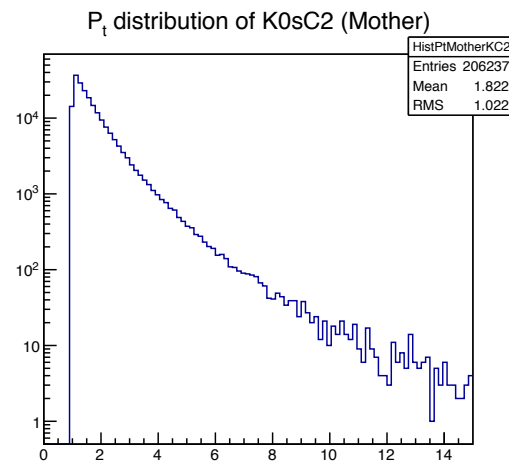
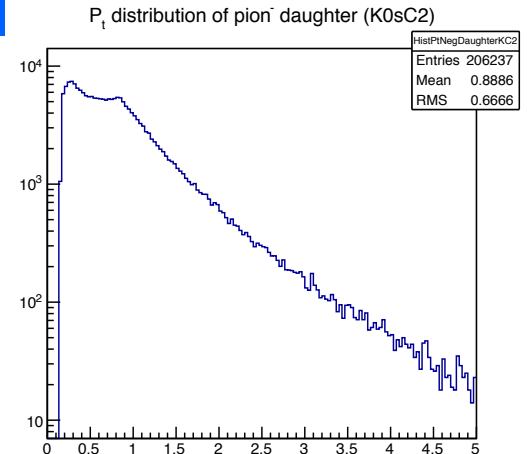
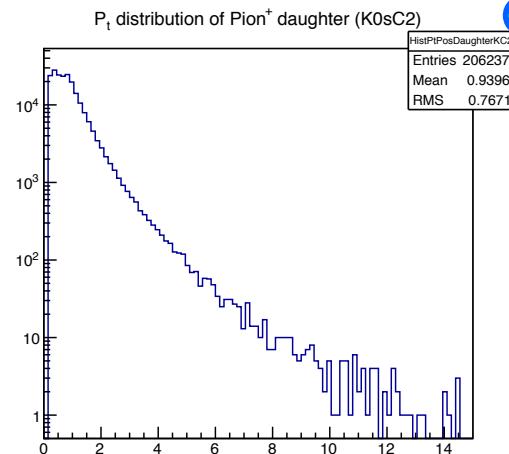
# Variando cortes

Comenzamos a variar cortes buscando obtener una mejor selección de K0s/Lambdas.

Queremos que la razón de ruido/señal sea lo mas pequeña posible

```
if ( (cPtPos > 0.16 ) &&
      (cPtNeg > 0.16 ) &&
      (cDcaPosToPrimVertex > 0.1 ) &&
      (cDcaNegToPrimVertex > 0.1 ) &&
      (cDcaV0Daughters < 1.0 ) &&
      (cV0Radius > 0.9 ) &&
      (cV0Radius < 100 ) &&
      (cV0CosineOfPointingAngle > 0.998 ) &&
      (cisLambda)
    ) {
  if (TMath::Abs(lRapK0s) < 0.3) {
    if (!cOnFlyStatus){
      cont++;
    }
  }
}
```

Corrida 126404 del  
periodo LHC12d4c



```

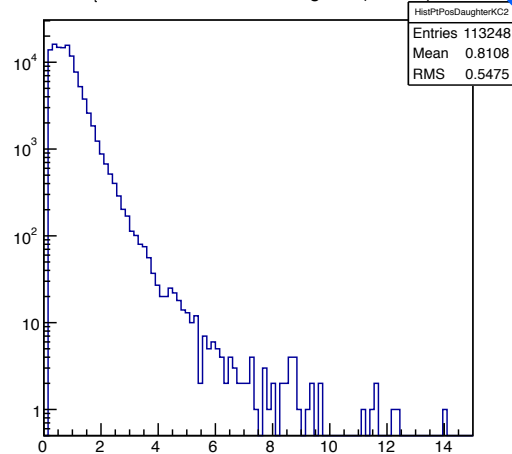
if ( (cPtPos > 0.16 ) && //0.16
    (cPtNeg > 0.16 ) && //0.16
    (cDcaPosToPrimVertex > 0.1 ) && //0.1
    (cDcaNegToPrimVertex > 0.1 ) && //0.1
    (cDcaV0Daughters < 1.0 ) && //1.0
    (cV0Radius > 0.9 ) && //0.9
    (cV0Radius < 10 ) && //100
    (cV0CosineOfPointingAngle > 0.998 ) &&
    (cisLambda)
    ) {
    if (TMath::Abs(lRapK0s) < 0.3) { //0.3

    if(!cOnFlyStatus){
        cont++;
    }
    }
}

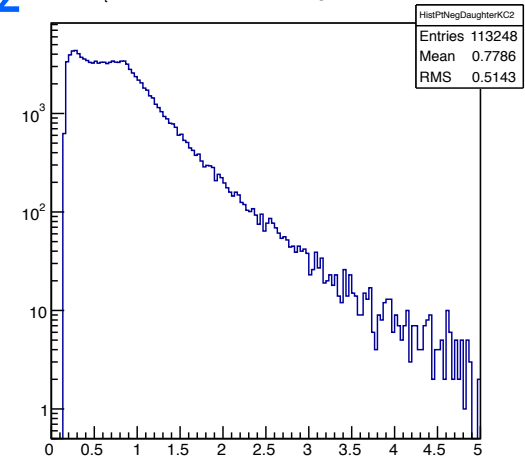
```

Corrida 126404 del  
periodo LHC12d4c

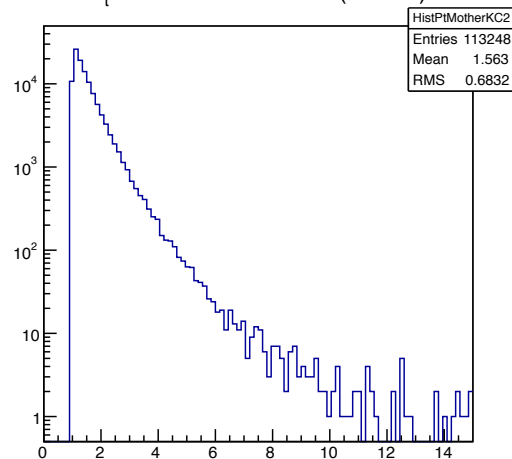
$P_t$  distribution of  $\text{Pion}^+$  daughter (K0sC2)



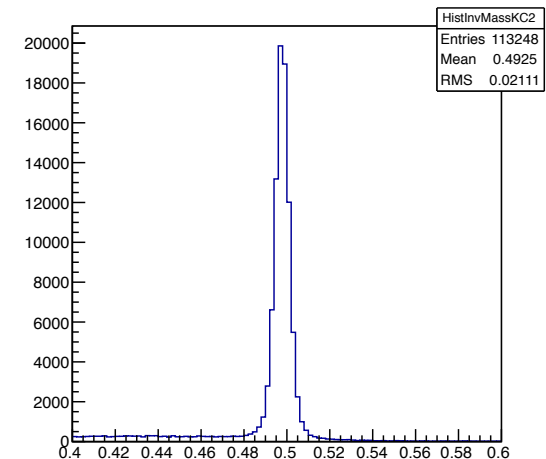
$P_t$  distribution of  $\text{pion}^-$  daughter (K0sC2)

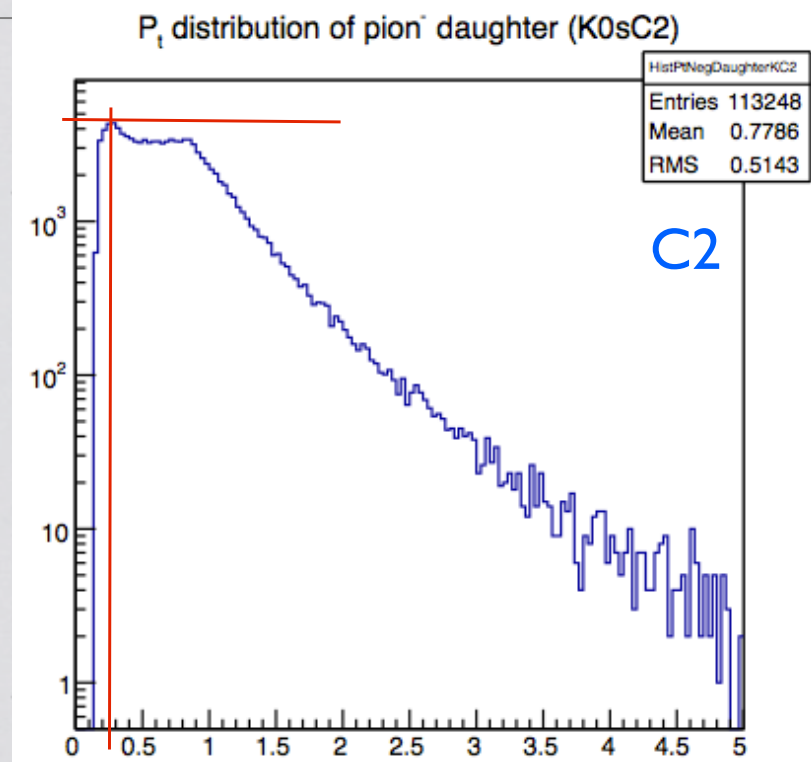
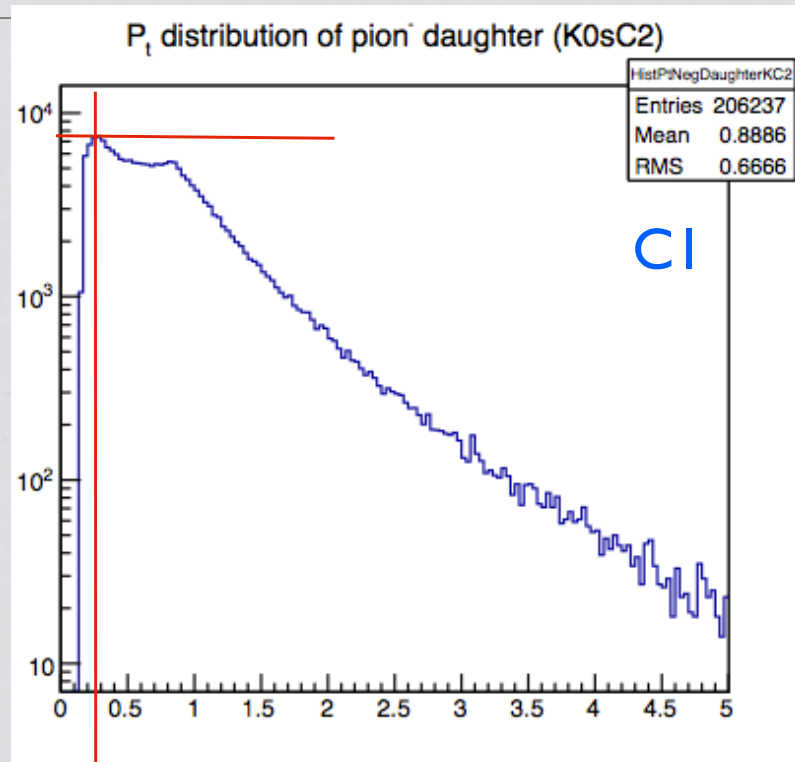


$P_t$  distribution of K0sC2 (Mother)



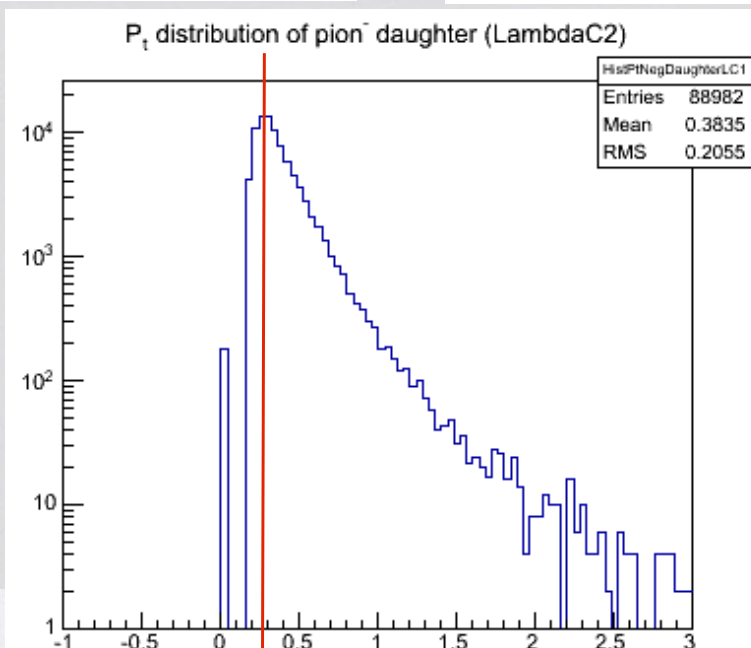
Invariant Mass distribution of K0sC2





Podría ser que no es el segundo pico el que está mal, sino mas bien el primero

ya que parece coincidir con el pion del Lambda



El lunes se hará la razón de ruido/señal para optimizar cortes(se supone ya están optimizados) y haré una asociación MC para las partículas hijas

# Variables de Forma

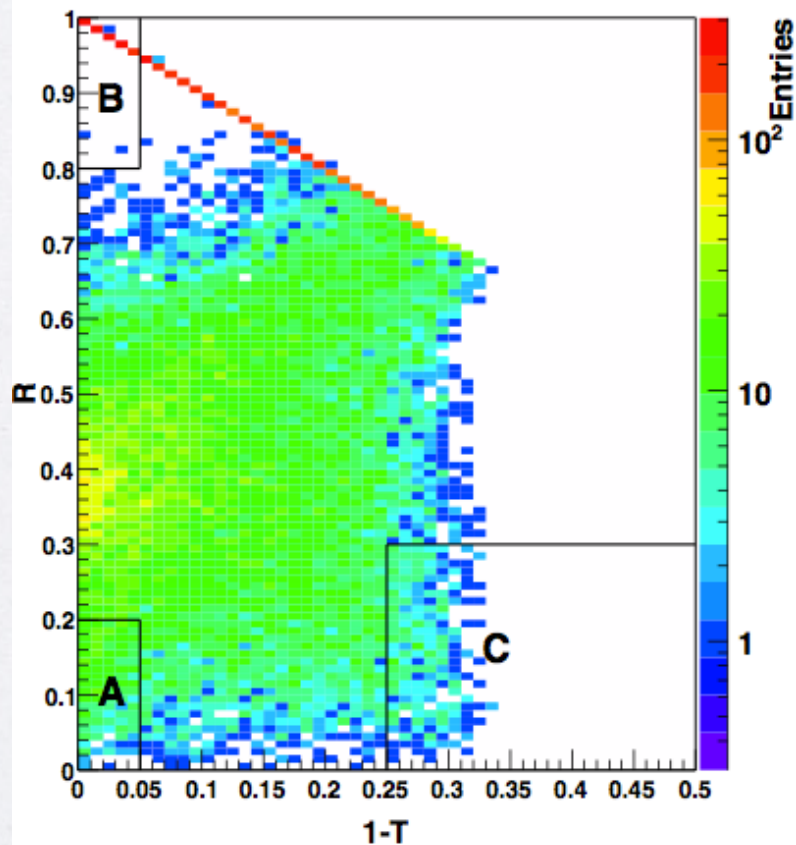
A - Dos Jets

B ---- Un Jet

C - Isótopo

[arXiv:0902.0074](https://arxiv.org/abs/0902.0074) [hep-ph]

Corrida 126404 del  
periodo LHC12d4c



\*Eventos que incluyen V0s

\* Mayor densidad desplazada

\* [T vs R] en lugar de [(1-T) vs R]

