Status Report
- Xi0 reconstruction -

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Jan. 04 2018

Decay Modes

Mode (Ξ_c^0)	Signal Yield (10^3)	Background Yield (10^3)	S/B
Ω^-K^+	4.3	0.4	10.8
$\Xi^-\pi^+$	24.3	6.5	3.7
$\Sigma^0K^-\pi^+$	6.7	4.3	1.6
$pK^-K^-\pi^+$	9.5	6.5	1.5
$\Lambda K^-\pi^+$	15.7	11.3	1.4
$\Xi^-\pi^+\pi^0$	15.8	13.2	1.2
$\Xi^0\pi^+\pi^-$	3.7	3.4	1.1
$\Xi^-\pi^+\pi^+\pi^-$	9.6	9.8	1.0
ΛK_s^0	4.8	5.0	1.0
$pK^-K_s^0$	6.4	10.6	0.6
	100.8	71	1.4

< Decay modes for Ξ_c^0 >

Mode (Ξ_c^+)	Signal Yield (10^3)	Background Yield (10^3)	S/B
$\Xi^-\pi^+\pi^+$	33.6	8.8	3.8
$\Sigma^+K^-\pi^+$	6.0	3.5	1.7
$\Lambda K^-\pi^+\pi^+$	5.0	3.4	1.5
$\Xi^0\pi^+$	1.4	1.1	1.3
$\Xi^0\pi^+\pi^+\pi^-$	2.5	2.4	1.0
$\Lambda K_s^0\pi+$	6.5	7.4	0.9
$\Sigma^0K_s^0\pi^+$	1.1	1.5	0.7
	56.1	28.1	2.0

< Decay modes for Ξ_c^+ >

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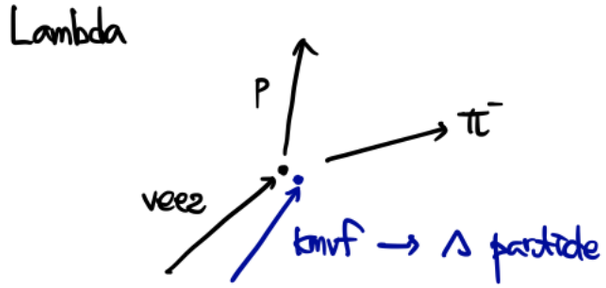
Base Reconstruction

Base		
Ξ^0	**—>**	**$\Lambda+\pi^0$**
Ξ^-	**—>**	**$\Lambda+\pi^-$**
Ω^-	**—>**	**$\Lambda+K^-$**
Σ^0	**—>**	**$\Lambda+\gamma$**
Λ	**—>**	**Λ**
Σ^+	—>	$p+\pi^0$

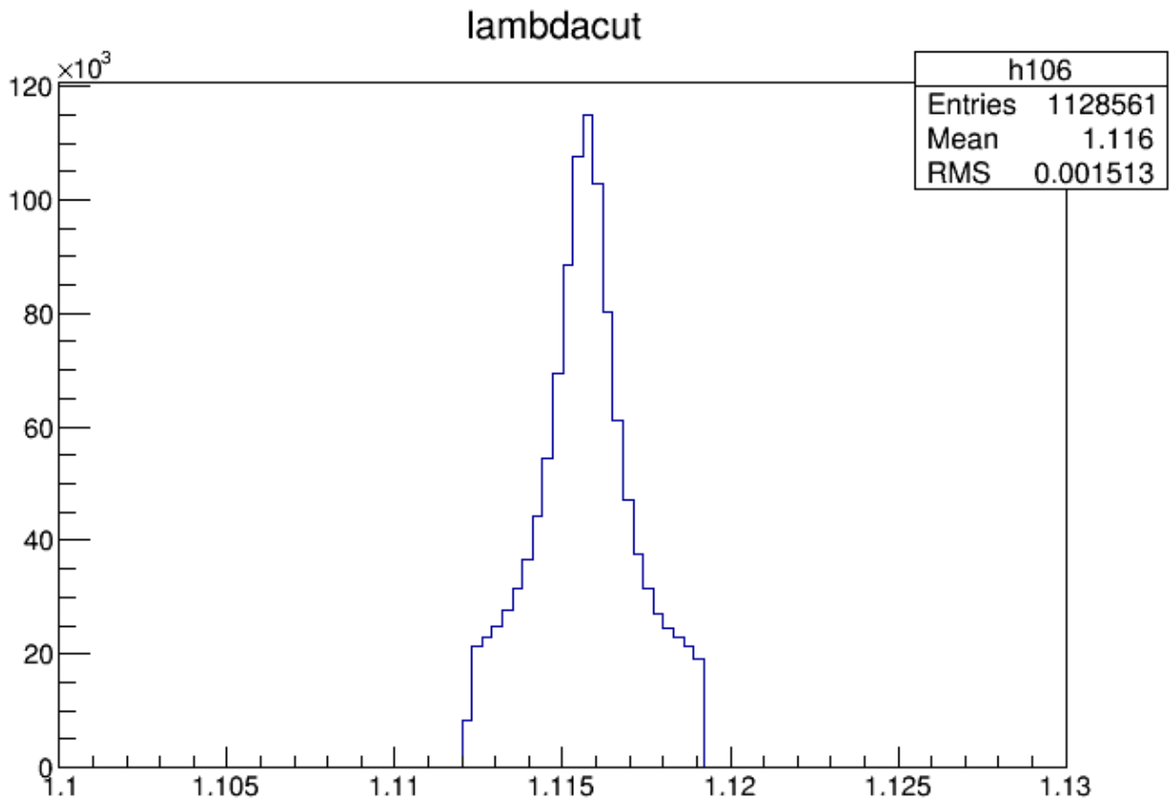
Most bases come from Λ.

Λ Recon.

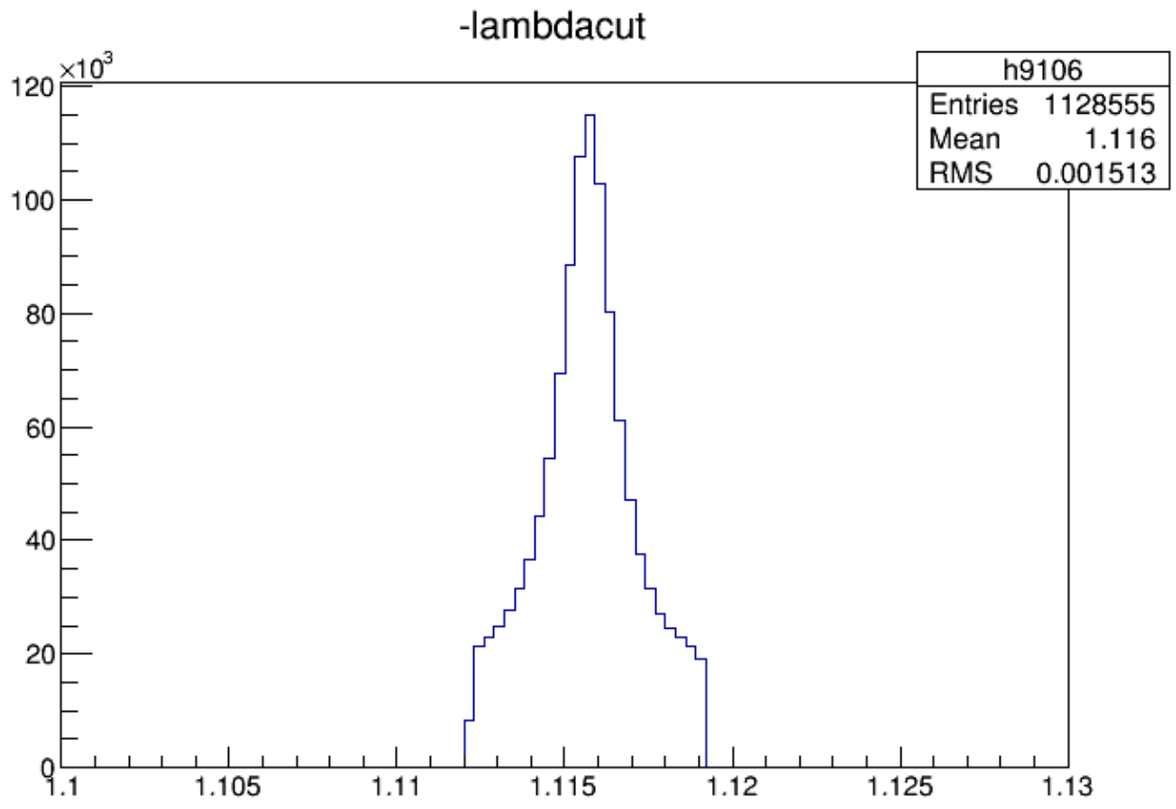
- Find Λ candidate from vee2.
- And perform kmassvertex fitting.



Λ Recon.



< OLD. Lambda mass before kmassvertex fitting >

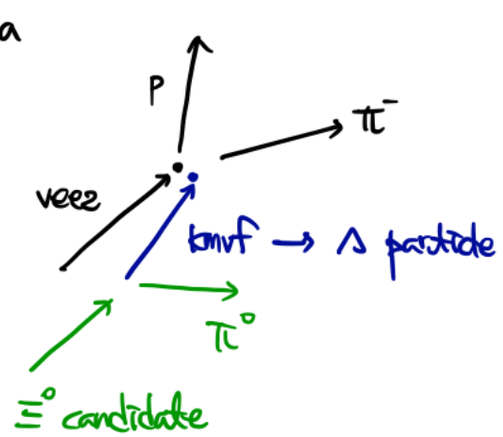


< NEW. Lambda mass before kmassvertex fitting >

- Difference of # entries = 0.0005%
- Due to significant figure, successive computation.

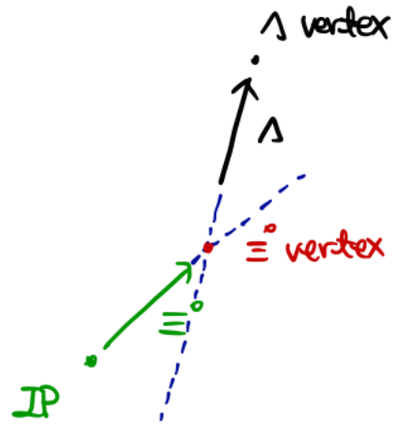
Ξ^0 Recon.

- Find Λ candidate from vee2.
- And perform kmassvertex fitting.
- Ξ^0 candidate = kmv fitted Λ + π

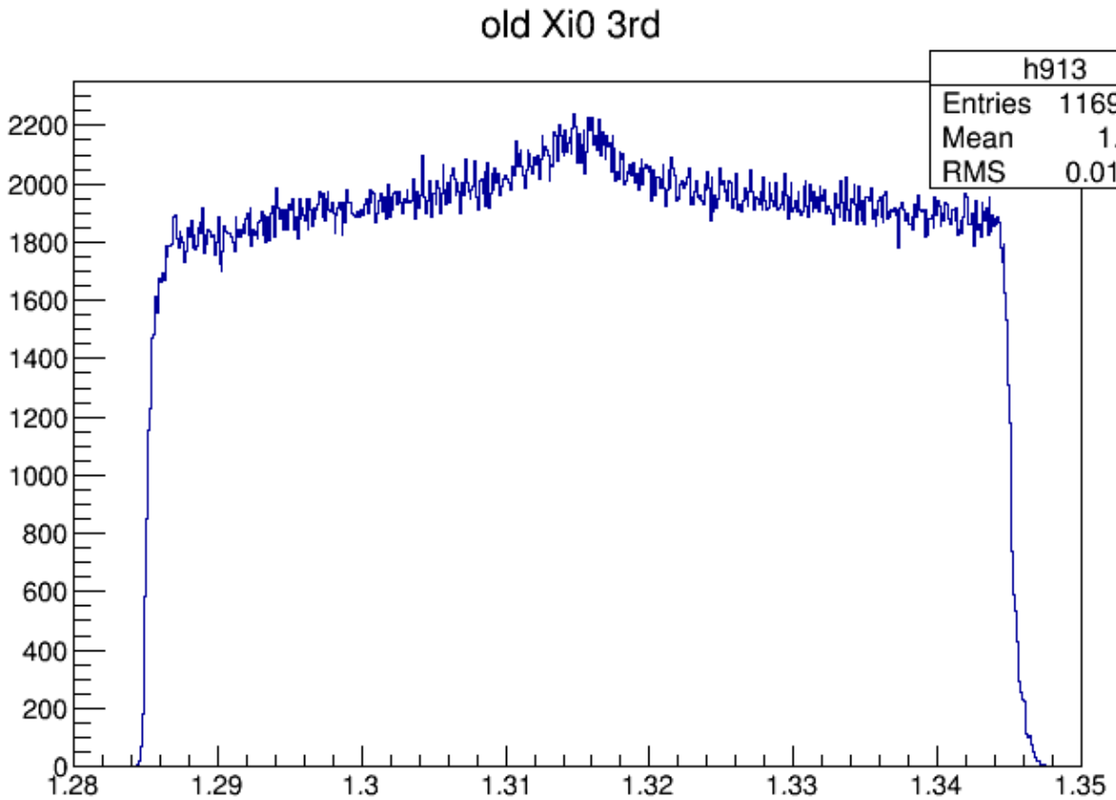


Ξ^0 Vertex

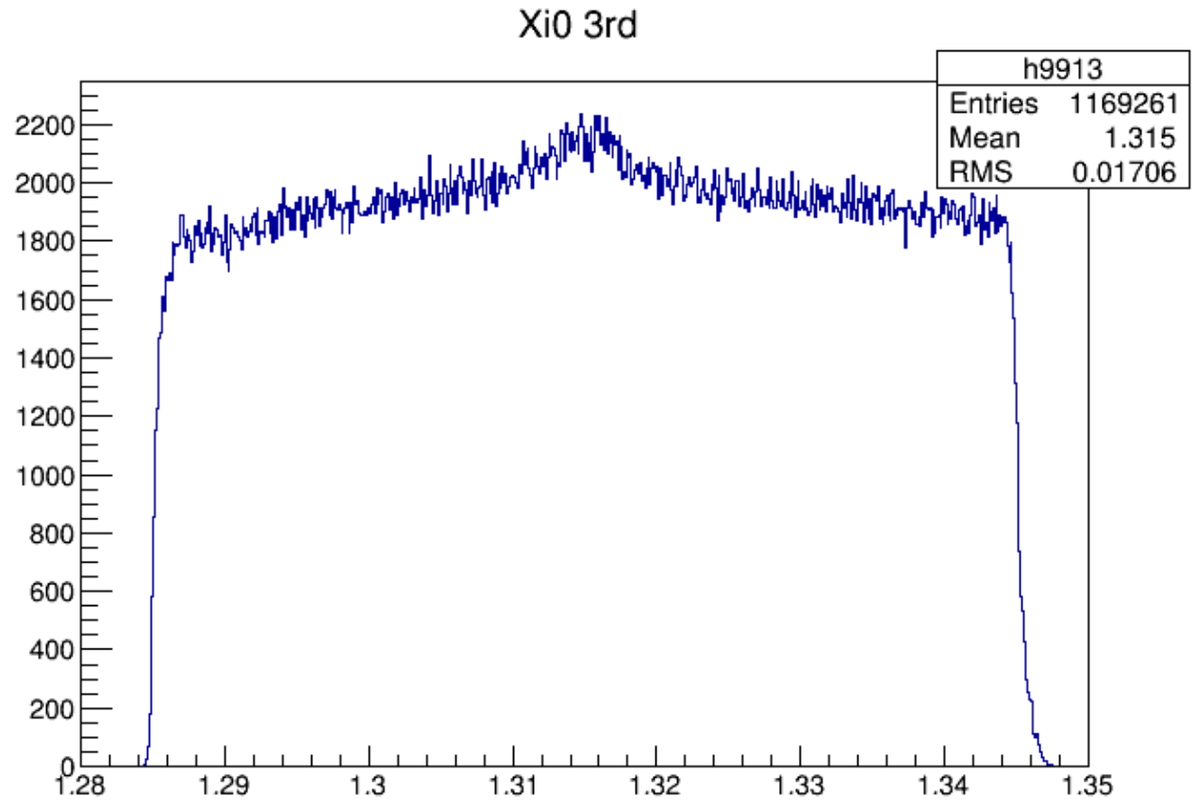
- Assuming Ξ^0 comes from IP.
- Ξ^0 vertex = intersection of two line.
- Performing kmassvertex fitting using this vertex.



Ξ^0 Recon.



< OLD. Lambda mass before kmassvertex fitting >



< NEW. Lambda mass before kmassvertex fitting >

- Difference of # entries = 0.0009%
- Due to significant figure, successive computation.
- Very rough cuts are applied.

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