

Analysis $\phi \rightarrow K^+ K^-$ using event mixing background in PbPb

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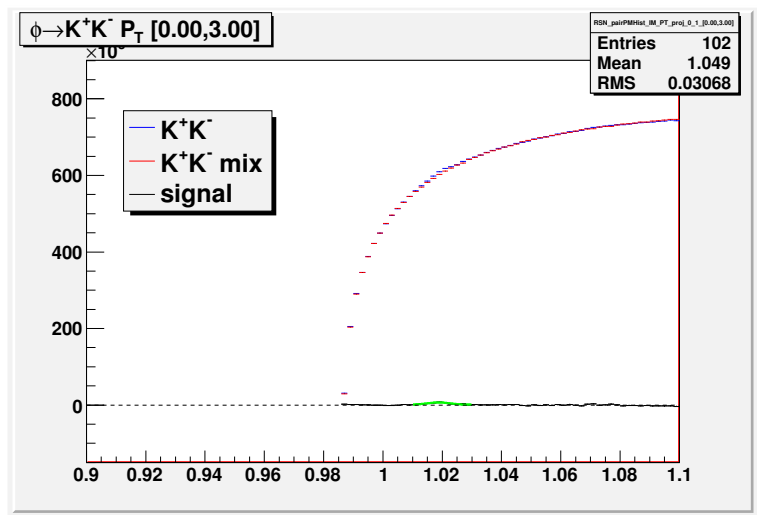
March 11, 2011

- /alice/data/LHC10h_000137366_p2
- Event mixing cuts
 - Multiplicity $\langle 1-2000 \rangle$ step 100
 - ZVertex $\langle -5,5 \rangle$ step 1
- Processed 1.0×10^6
- Selected 0.19×10^6

Cuts

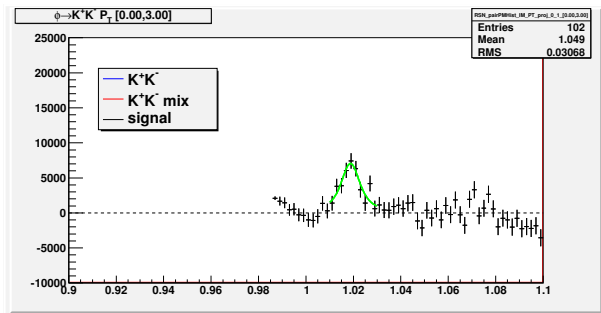
```
Double_t sigma[] = { -3.0, 3.0 };  
AliRsnCutPIDITS *itsCut = new AliRsnCutPIDITS("cutITS", AliPID::kKaon,  
sigma[0], sigma[1], kTRUE);  
AliRsnCutPIDTPC *tpcCut = new AliRsnCutPIDTPC("cutTPC", AliPID::kKaon,  
sigma[0], sigma[1], kTRUE);  
AliRsnCutPIDTOF *tofCut = new AliRsnCutPIDTOF("cutTOF", AliPID::kKaon,  
sigma[0], sigma[1], kTRUE);
```

$\phi \rightarrow K^+K^-$ with mixed background K^+K^-



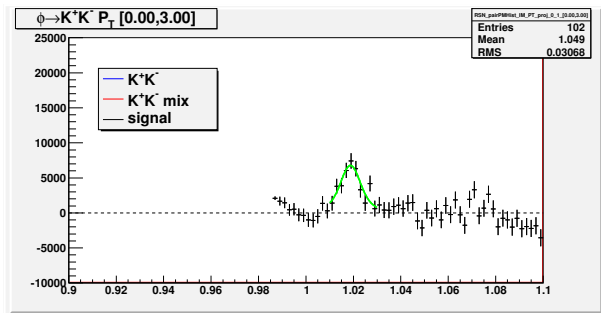
$\phi \rightarrow K^+K^-$ with mixed background K^+K^-

- $Mean = 1018.7 \pm 0.5 \text{ MeV}/c^2$
- $\Gamma = 5.636 \pm 2.0 \text{ MeV}/c^2$
- $\sigma_{fixed} = 1.7 \text{ MeV}/c^2$

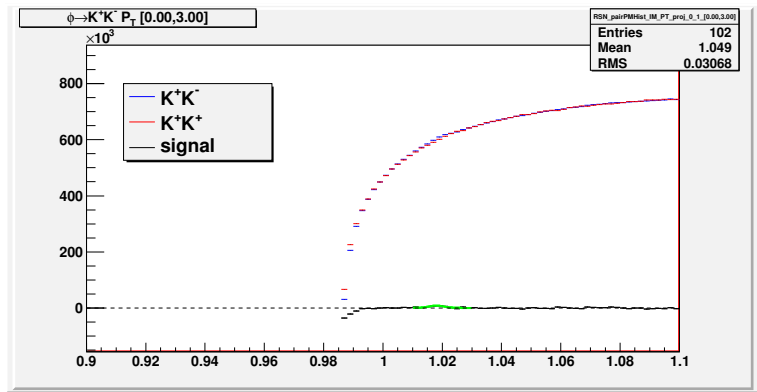


$\phi \rightarrow K^+K^-$ with mixed background K^+K^-

- $Mean = 1018.0 \pm 0.38 \text{ MeV}/c^2$
- $\Gamma = 3.0 \pm 0.5 \text{ MeV}/c^2$
- $\sigma_{fixed} = 3.0 \text{ MeV}/c^2$

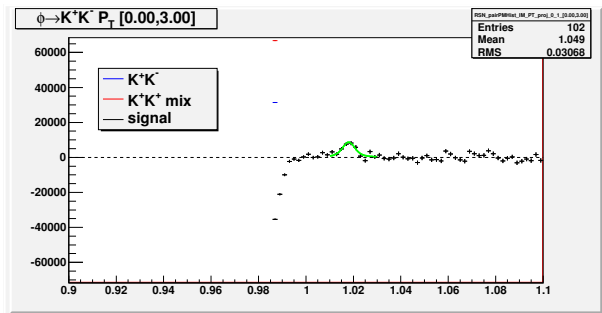


$\phi \rightarrow K^+K^-$ with like sign background K^+K^+



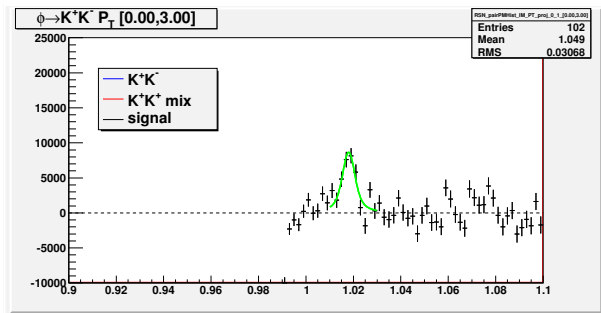
$\phi \rightarrow K^+K^-$ with like sign background K^+K^+ zoom1

- $Mean = 1018.02 \pm 0.5 \text{ MeV}/c^2$
- $\Gamma = 5.636 \pm 2.0 \text{ MeV}/c^2$
- $\sigma_{fixed} = 1.7 \text{ MeV}/c^2$

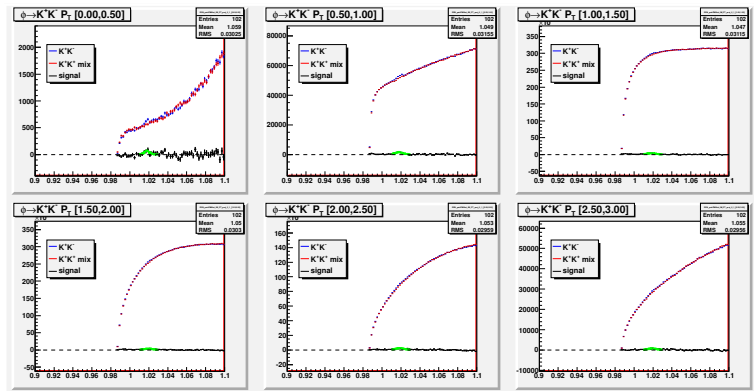


$\phi \rightarrow K^+K^-$ with like sign background K^+K^+ zoom2

- $Mean = 1018.02 \pm 0.5 \text{ MeV}/c^2$
- $\Gamma = 5.636 \pm 2.0 \text{ MeV}/c^2$
- $\sigma_{fixed} = 1.7 \text{ MeV}/c^2$



$\phi \rightarrow K^+K^-$ mixed background $K^+K^- p_T$ distribution



$\phi \rightarrow K^+K^-$ mixed background K^+K^- p_T distribution zoom

