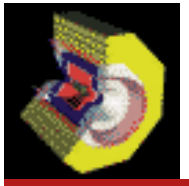

Cornell University
Laboratory for
Elementary-Particle Physics

$D_S^{*+} \to D_S^+ e^+ e^-$

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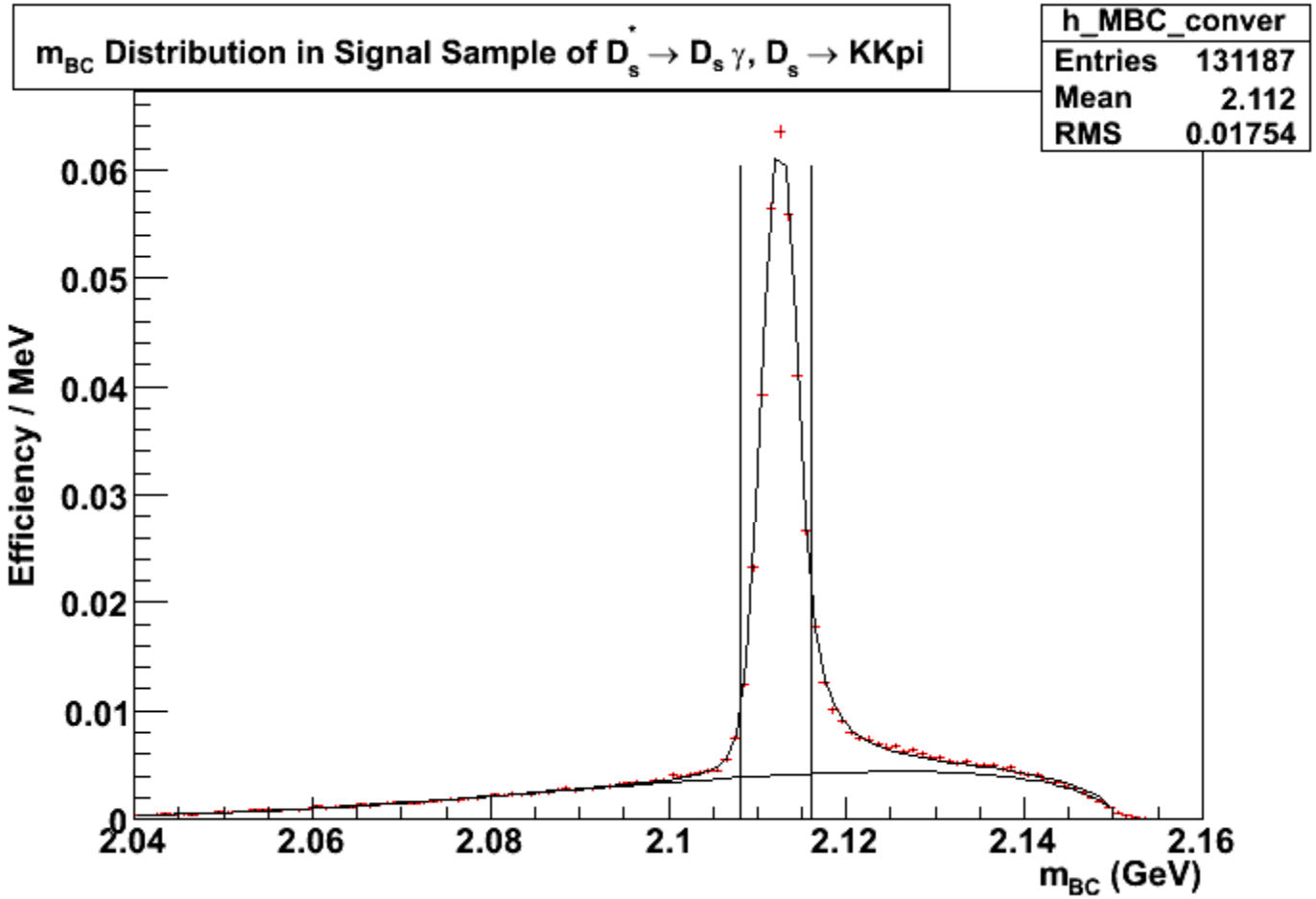
Cornell University

Contents

- DsGamma

6 July 2010

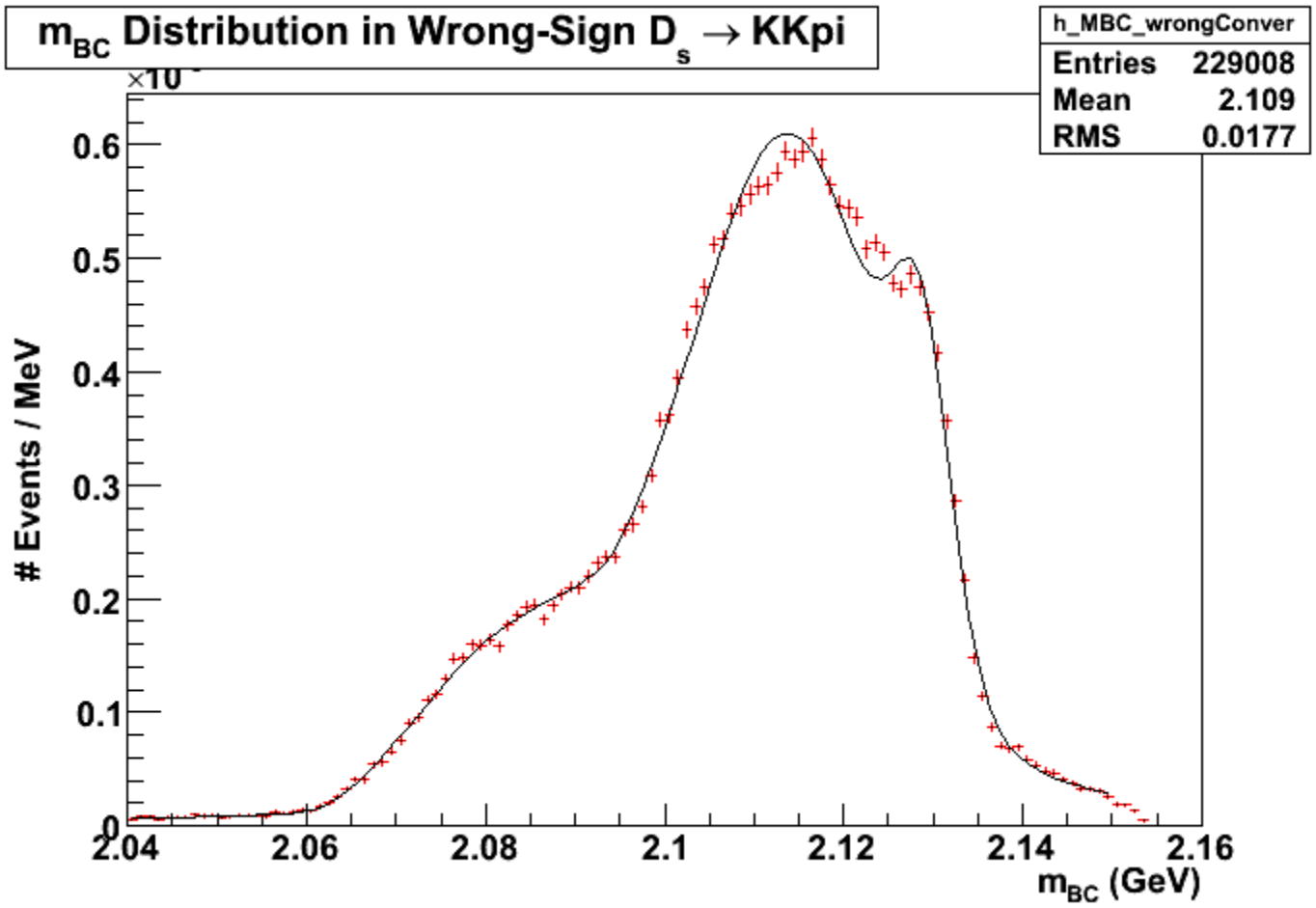
Ds* → Ds gamma Channel (Ds → KKpi)



•We start with a Ds*+ -> Ds+ gamma sample and reconstruct the Ds*+ through the Ds+.
•The Ds- on the other side is decaying generically.
•Plot fitted to a double-shouldered Crystal Ball function standing on an Argus function.

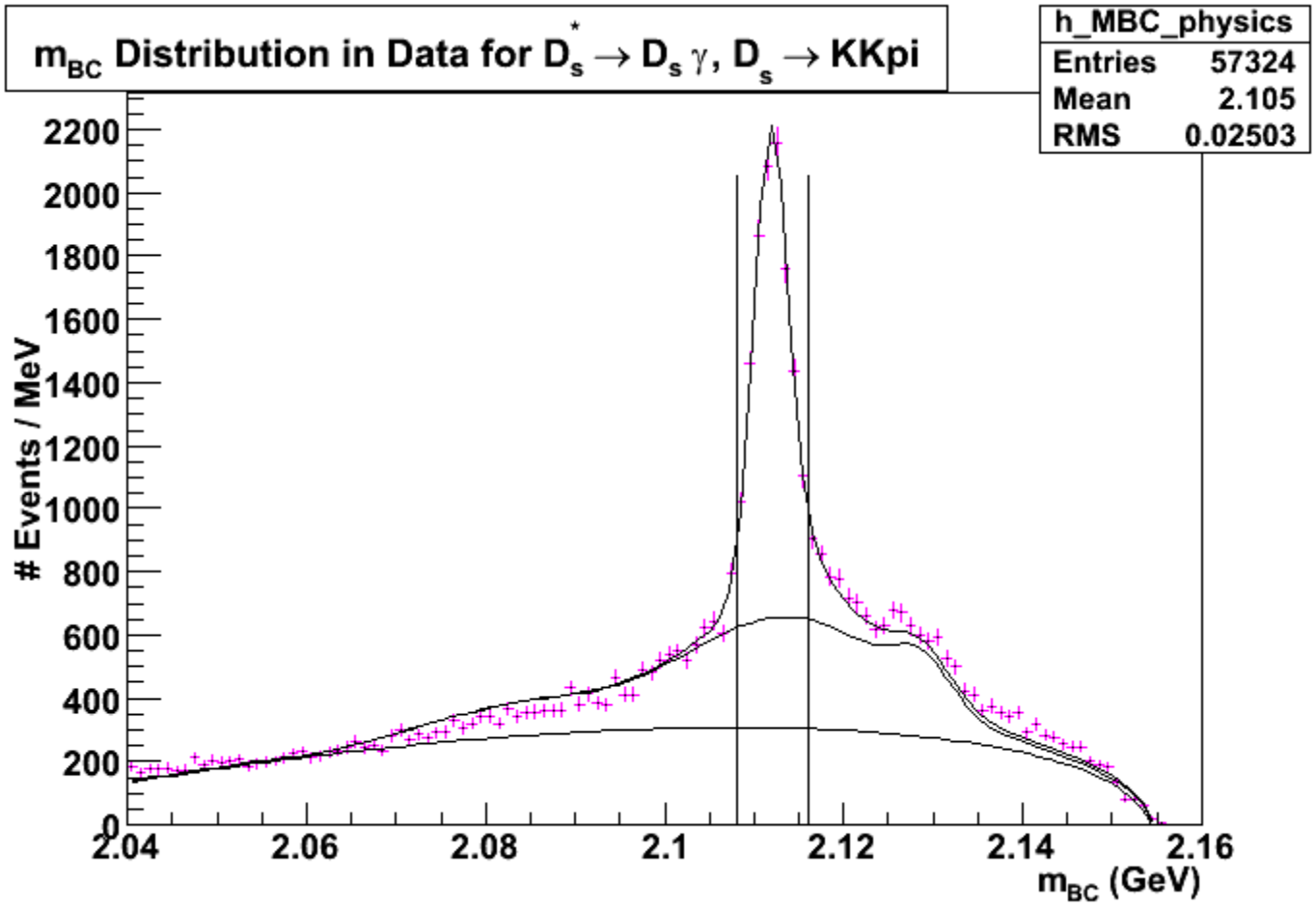
•The cut efficiency is found to be **28.5 +- 0.1%**

Ds* → Ds gamma Channel (Ds → KKpi)



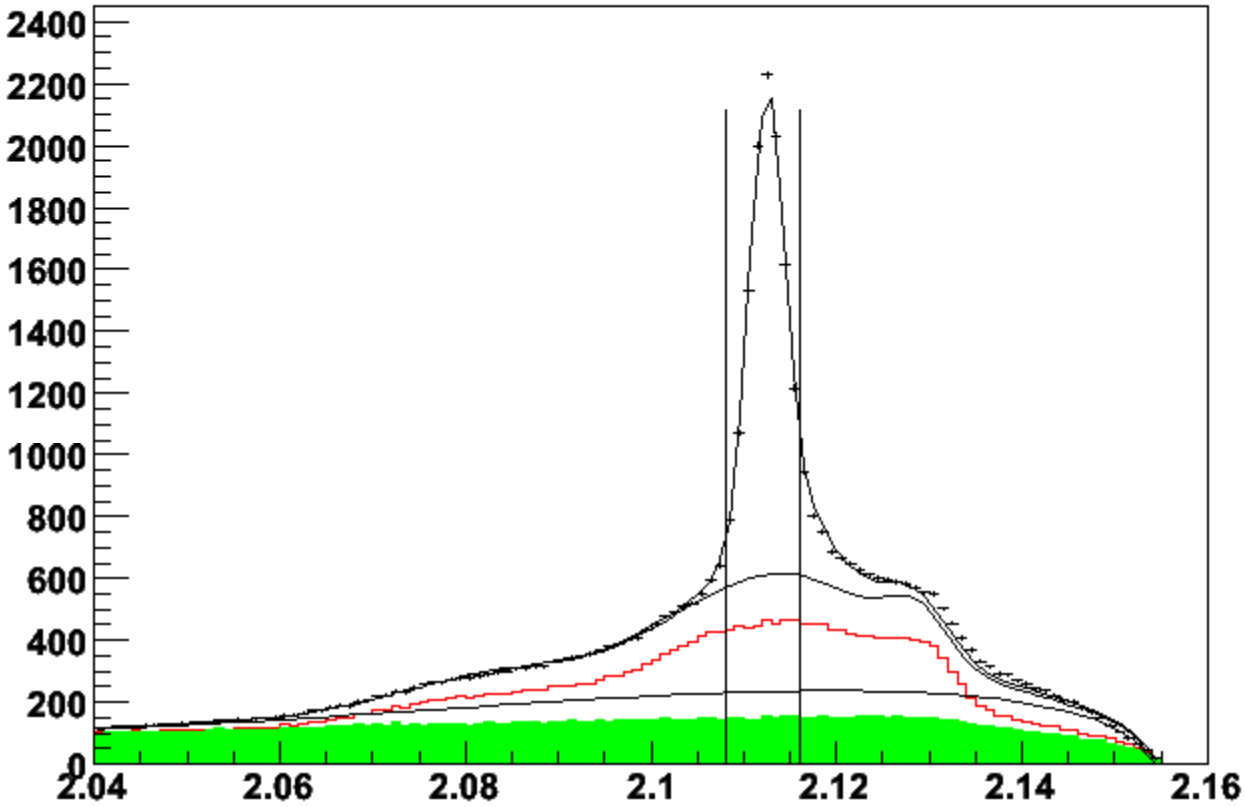
•We start with a Ds*+ → Ds+ gamma sample and reconstruct the Ds*+ through the Ds-→KKpi

Ds* → Ds gamma Channel (Ds → KKpi)



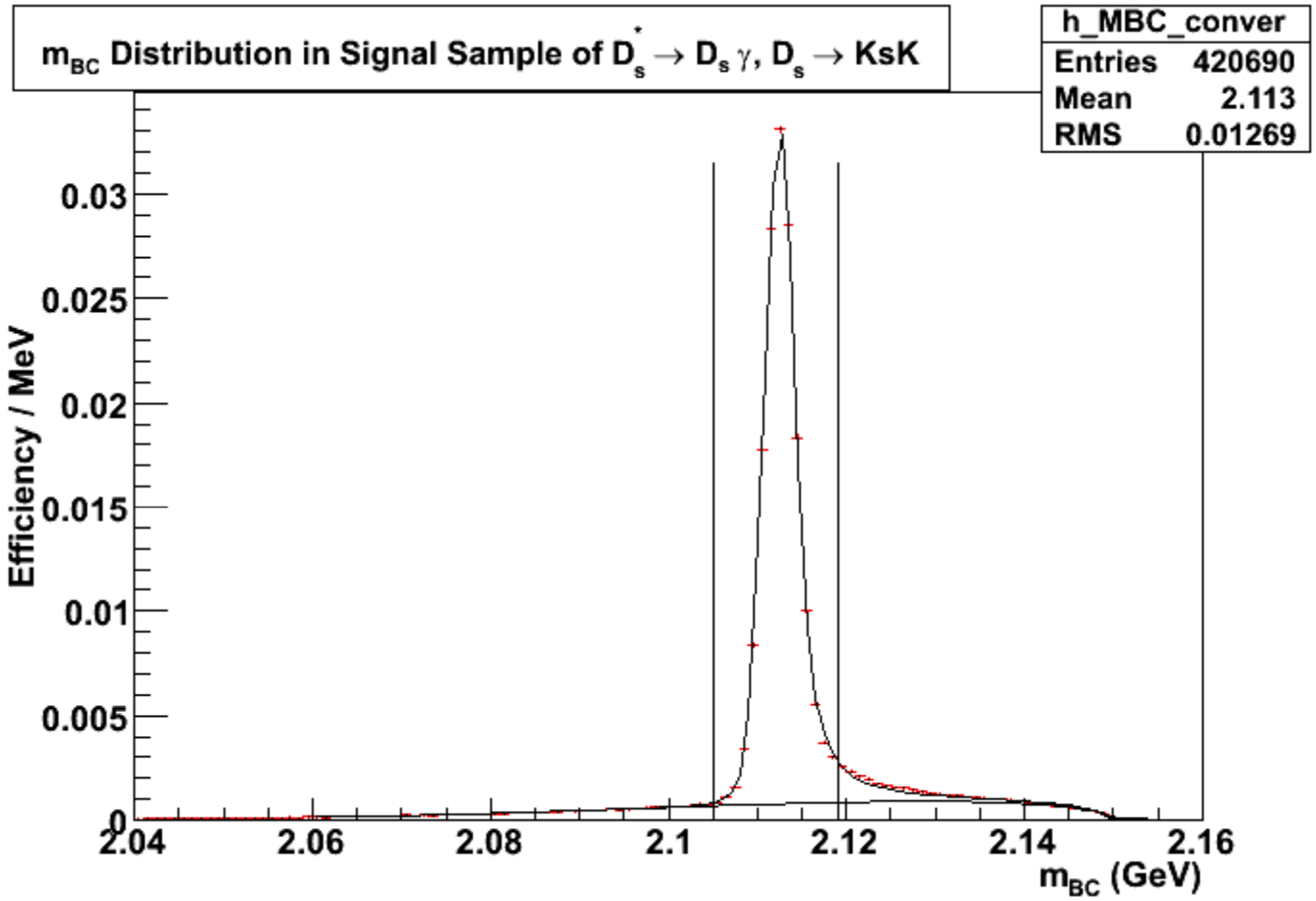
- #Signal Events = 7708
- B(Ds → Kkpi) = 0.055 +- 0.0028
- I infer B(Ds*→Ds gamma) = 0.89 +- 0.06.

Ds* → Ds gamma Channel (Ds → KKpi)



•B(Ds → KKpi) = 0.537 (mc-ddmix-generic, 20080404_MCGEN_1... They have Dalitz structure for KKpi, not individual modes)
•However, in my signal MC, which I prepared for data, *does* have individual modes
•I infer B(Ds*->Ds gamma) = 0.906 +- 0.003.

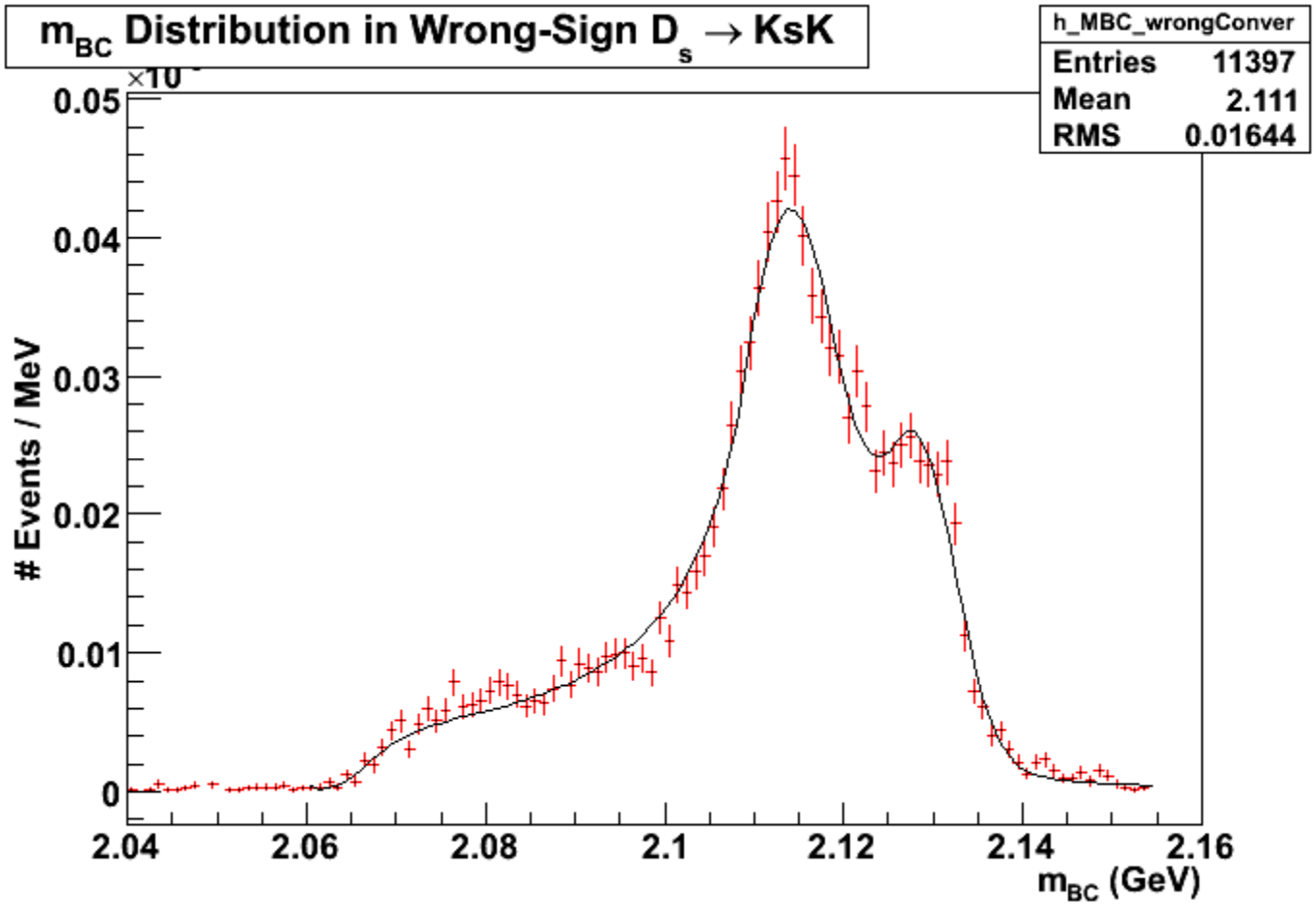
Ds* → Ds gamma Channel (Ds → KsK)



•We start with a Ds*+ -> Ds+ gamma sample and reconstruct the Ds*+ through the Ds+.
•The Ds- on the other side is decaying generically.
•Plot fitted to a double-shouldered Crystal Ball function standing on an Argus function.

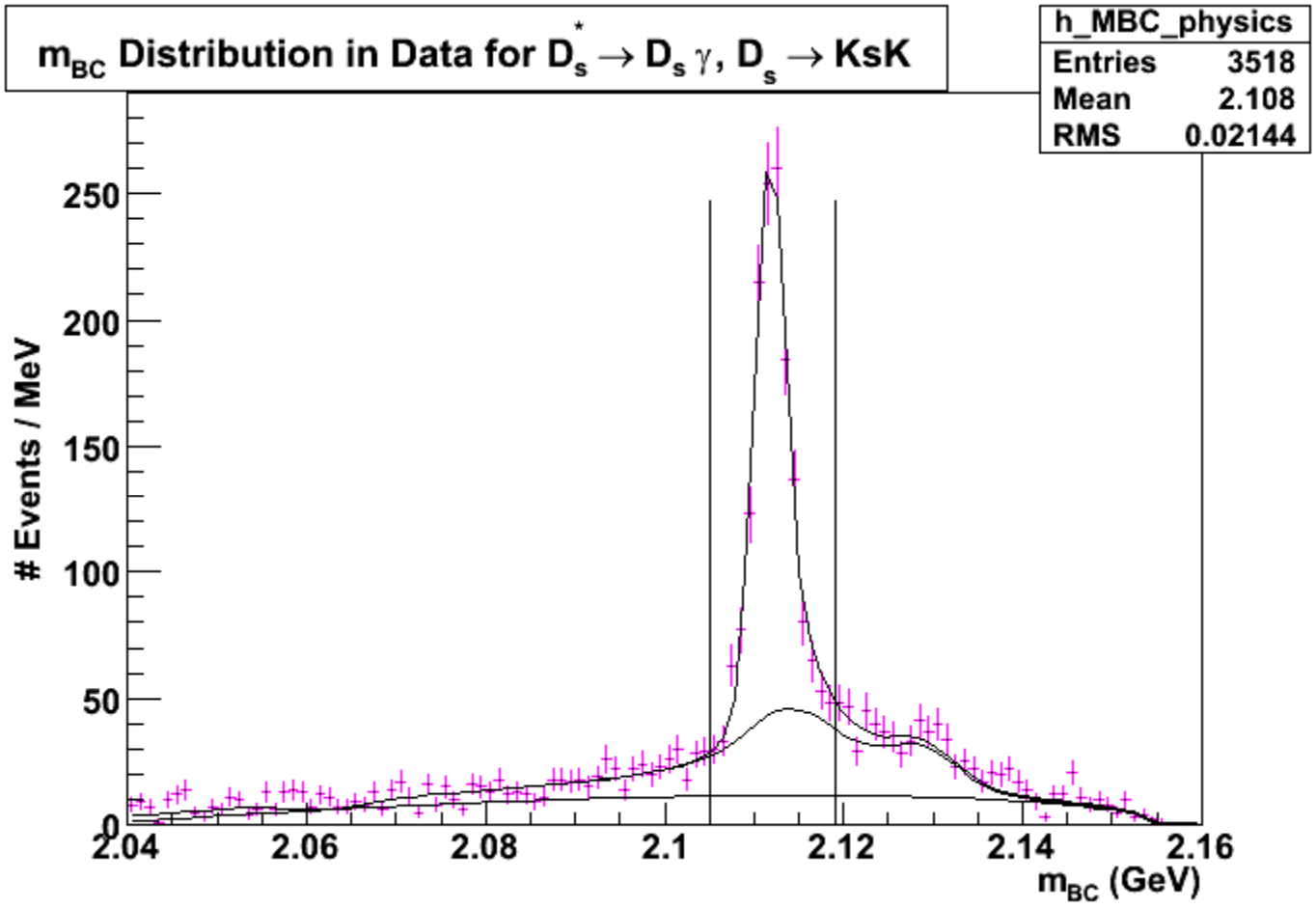
•The cut efficiency is found to be **15.3 +- 0.09 %**

Ds* → Ds gamma Channel (Ds → KKpi)



•We start with a Ds*+ → Ds+ gamma sample and reconstruct the Ds*+ through the Ds-→KKpi

Ds* → Ds gamma Channel (Ds → KKpi)



- #Signal Events = 1064
- B(Ds → Kkpi) = 0.0149 +- 0.0009
- I infer B(Ds*→Ds gamma) = 0.84 +- 0.06.

Ds* → Ds gamma Channel (Ds → KKpi)