$$D_s^{*+} \rightarrow D_s^+ e^+ e^-$$

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- Cuts for each of the 9 modes have been optimized for the pion-fitted and electron-fitted samples.

- Still evaluating the usefulness of vertex constraining the daughters. Had previously shown Anders that with vertex constraints, the width of the Ds mass cut could be reduced by 27% while retaining the same signal yield. Am investigating how this reduces the background.

- Once cuts are settled, we will unblind the sideband region of the $\Delta\Phi$ cut to make sure we see the number of conversion events we expect.

Prediction for Data for Sample Set of Cuts

Decay Mode of the D_s^+	Expected Signal Events in 586 pb^{-1} in the *Pion-Fitted* Samples	Expected Background Events in 586 pb^{-1} in the *Pion-Fitted* Samples	Expected Signal Events in 586 pb^{-1} in the *Electron-Fitted* Samples	Expected Background Events in 586 pb^{-1} in the *Electron-Fitted* Samples	Details in Link
$K^+K^-\pi^+$	12.3	2.0	16.6	3.3	KKpi
K_sK^+	3.3	0.8	3.2	0.5	KsK
$\pi^+\eta;\ \eta\rightarrow\gamma\gamma$	4.2	0.4	4.8	0.5	pieta
$\pi^+\acute{\eta};\ \acute{\eta}\rightarrow\pi^+\pi^-\eta;\ \eta\rightarrow\gamma\gamma$	1.1	0.5	1.2	0.0	pietaprime
$K^+K^-\pi^+\pi^0$	4.9	3.8	5.1	2.2	KKpipi0
$\pi^+\pi^-\pi^+$	3.2	1.3	3.9	2.1	pipipi
$K^{*+}K^{*0};\ K^{*+}\rightarrow K^0_S\pi^+;\ K^{*0}\rightarrow K^-\pi^+$	1.9	1.3	2.1	1.0	KsKmpipi
$\eta\rho^+;\ \eta\rightarrow\gamma\gamma;\ \rho^+\rightarrow\pi^+\pi^0$	5.8	5.9	6.0	2.5	pipi0eta
$\acute{\eta}\pi^+;\ \acute{\eta}\rightarrow\rho^0\gamma$	2.3	2.4	2.5	2.3	pietaprimerho
Total	**39.0**	**18.4**	**45.4**	**14.4**	

$$9.1\sigma \rightarrow 12.0\sigma$$

Reprocessing Campaign Frontline

Dataset	Pass2		DTag		N-Tuplize
39	20060117_P2 PASS2-C_5	Done	20060224_FULL_1 Analysis-C_5	Done	Done Missed DsTags ~ 0.18% New DsTags ~ 0.1%
40	20060802_P2 PASS2-C_6	Done	20060224_FULL_1 Analysis-C_6	Done	Done Missed DsTags ~ 0.15% New DsTags ~ 0.09%
41	20060802_P2 PASS2-C_6	Done	20060224_FULL_1 Analysis-C_6	Done	Done Missed DsTags ~ 0.14% New DsTags ~ 0.08%
47	20071023_P2 PASS2-C_6	Done	20060224_FULL_A_3 Analysis-C_6	Done	Done Missed DsTags ~ 0.18% New DsTags ~ 0.11%
48	20071023_P2 PASS2-C_6	Done	20060224_FULL_A_3 Analysis-C_6	Done	Done Missed DsTags ~ 0.15% New DsTags ~ 0.08%
Total		Done		Done	Done **Missed DsTags ~ 0.15%** **New DsTags ~ 0.09%**

Details of re-pass2-ing, DsTagging, n-tuplizing and validating documented here: Reprocessing