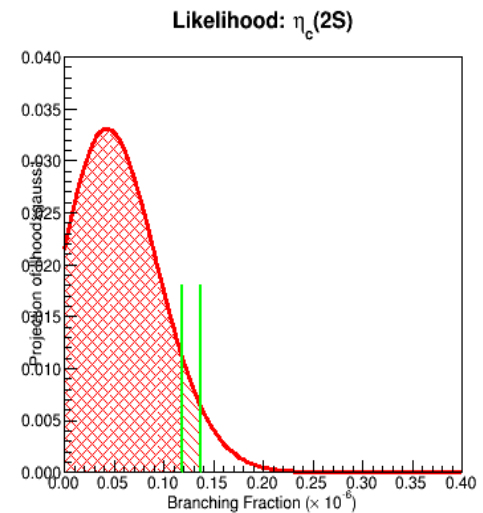
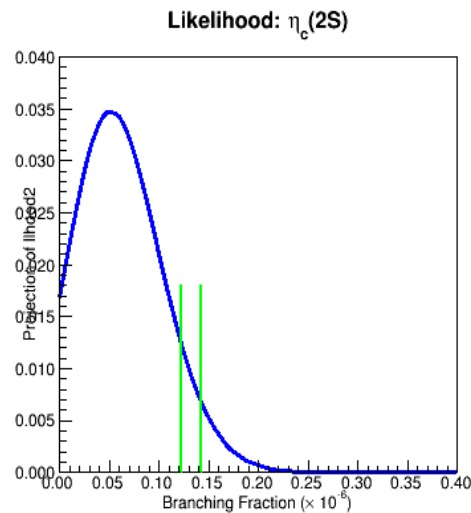
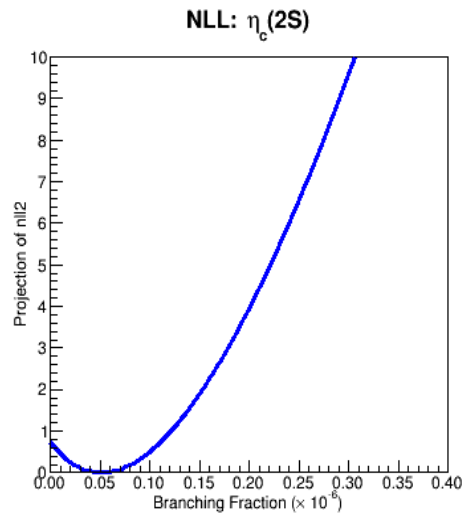


Systematic Uncertainty of Branching Fraction

- List of Systematical Errors for Each Decay Mode [%]

Source	$B^+ \rightarrow X_{c\bar{c}} K^+ \rightarrow p \bar{p} K^+$							
	$\eta_c(1S)$	J/ψ	$\chi_{c0}(1P)$	$\eta_c(2S)$	$\Psi(2S)$	$\Psi(3770)$	$X(3872)$	$X(3915)$
Tracking	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Proton PID	0.81	0.82	0.84	0.87	0.88	0.89	0.90	0.90
KID (K/ π)	0.87	0.89	0.78	0.89	0.89	0.94	1.07	1.10
K_S^0 reconstruction	-	-	-	-	-	-	-	-
Likelihood Ratio cut	0.56	0.49	6.58	18.03	7.74	118.948	10.20	17.22
MC statistical error	0.18	0.18	0.14	0.14	0.15	0.14	0.14	0.14
Fixed Parameters	5.61	0.09	6.75	21.42	9.09	120.085	12.27	42.05
Background PDF	0.33	0.01	0.37	0.21	0.06	37.2918	1.48	0.95
Number of BB pairs	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Total [%]	6.03	2.17	9.66	28.08	12.13	173.102	16.18	45.50

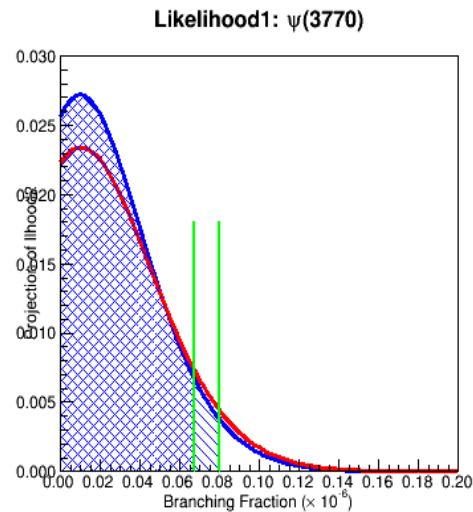
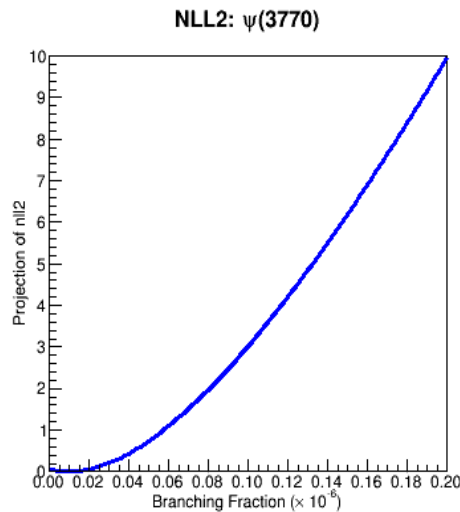
$$B^+ \rightarrow \eta_c(2S), \psi(2S) K^+ \rightarrow p \bar{p} K^+$$



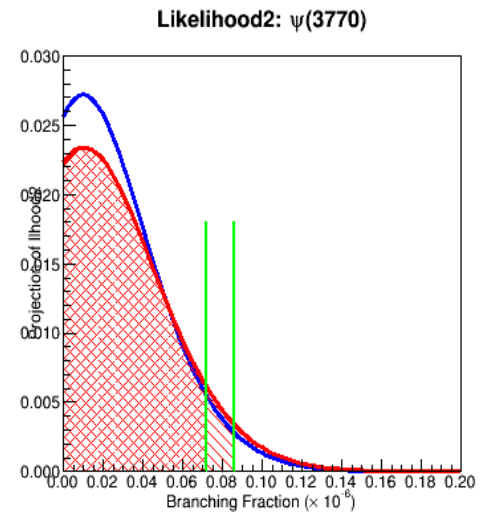
$$BF < 0.120 \times 10^{-6} \text{ (90\% CL)}$$

$$BF < 0.137 \times 10^{-6} \text{ (95\% CL)}$$

statistical error only
Both statistical and systematic errors

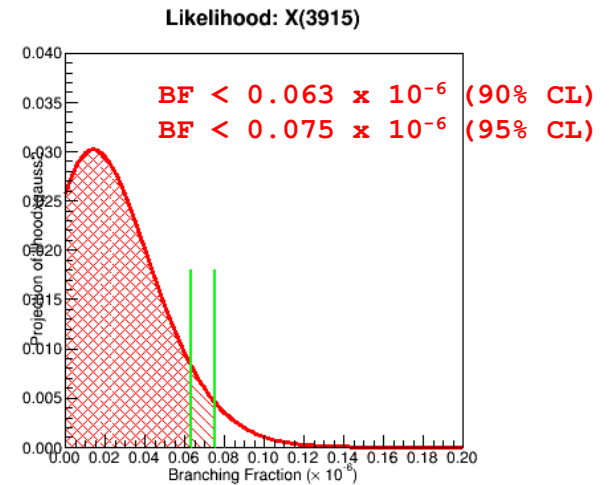
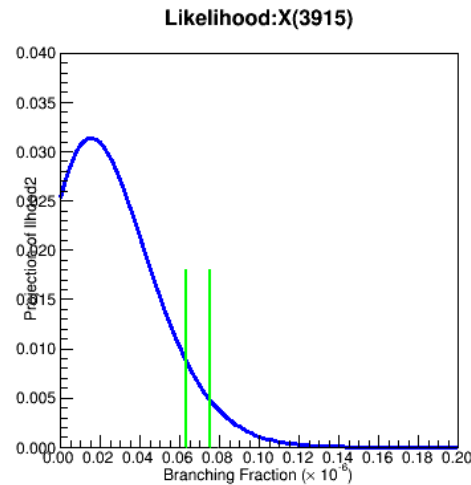
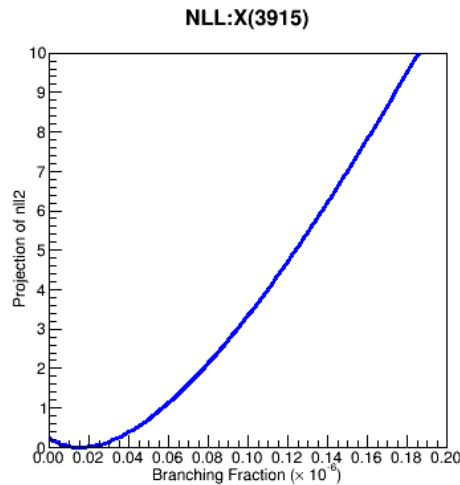
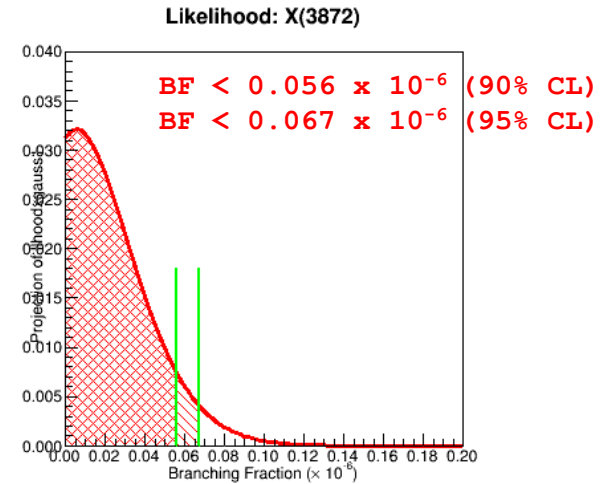
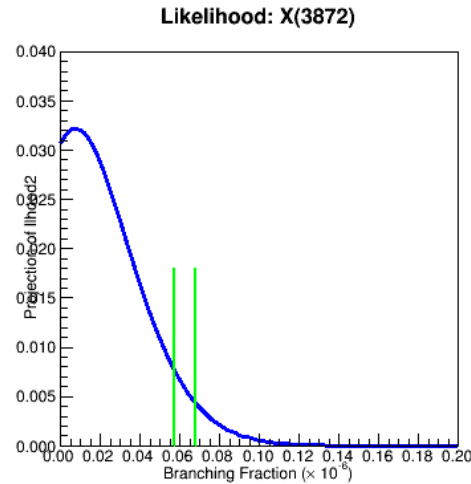
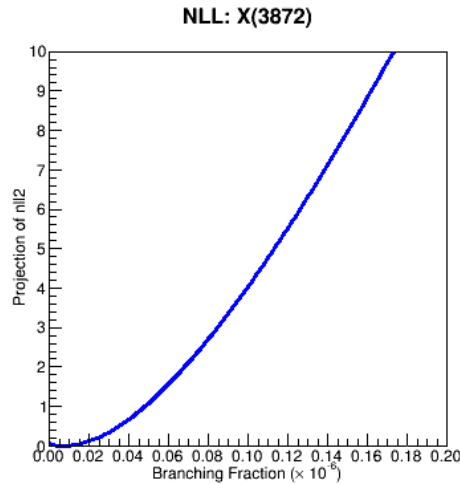


BF < 0.067 × 10⁻⁶ (90% CL)
BF < 0.080 × 10⁻⁶ (95% CL)



BF < 0.072 × 10⁻⁶ (90% CL)
BF < 0.086 × 10⁻⁶ (95% CL)

statistical error only
Both statistical and systematic errors



statistical error only
Both statistical and systematic errors

Preliminary Results

statistical error only

B ⁺ Decay	Yield	Significance (σ)	BF (x10 ⁻⁶)	UL 90% CL	UL 95% CL	PDG 2016 (x10 ⁻⁶)	LHCb (2013)	LHCb (2017)
$\eta_c(1S)$	327 ± 31	13.45	1.40 ± 0.13	-		1.44 ± 0.23	1.27 ± 0.08	
J/ψ	535 ± 25	35.26	2.20 ± 0.10	-		2.18 ± 0.07		
$\chi_{c0}(1P)$	15 ± 6	3.21	0.097 ± 0.038	-		0.0338 ± 0.0036	0.024 ± 0.021 < 0.062 (95% CL)	
$\eta_c(2S)$	8 ± 5 (< 17,19)	1.80	0.0518 ± 0.0333	< 0.118	< 0.137	-	< 0.106 (95% CL)	0.0347 ± 0.0076 (6σ)
Ψ(2S)	27 ± 6	6.65	0.165 ± 0.037	-	-	0.180 ± 0.009	0.175 ± 0.027	
Ψ(3770)	2 ± 6 (< 11,13)	0.28	0.010 ± 0.037	< 0.072	< 0.086	-		< 0.198 [0.220]
X(3872)	1 ± 2 (< 7, 8)	0.58	0.0076 ± 0.0145	< 0.056	< 0.067	-	< 0.017 (95% CL)	< 0.0044 [0.0055]
X(3915)	2 ± 4 (< 10,11)	0.62	0.0156 ± 0.0256	< 0.063	< 0.075	-	< 0.071 (95% CL)	

- The LHCb Collaboration, Eur. phys. J. C 73, 2462 (2013)
- The LHCb Collaboration, Phys. Lett. B 769, 305 (2017)