

Title

Effort

▼ 1) WP1: upgrade trigger

> 58mo

• 1.1) Develop trigger using Run-2 data

> 28,75mo

• 1.2) Commission trigger

< 3,25mo

• 1.3) Data taking with fully commissioned trigger - I

> 14,5mo

• 1.4) Data taking with fully commissioned trigger - II

> 6,5mo

• 1.5) Data taking with fully commissioned trigger - III

> 4,75mo

▼ 2) WP2: first measurement with new trigger paradigm (x-secs)

16mo

• 2.1) Preliminary reading

0,5mo

• 2.2) Development of analysis framework

1mo

• 2.3) Request for MC simulation

1mo

• 2.4) Obtain MC simulation (for all analyses)

2mo

▼ 2.5) Doing the full analysis with MC

6,5mo

• 2.5.1) Development of trigger selections

0,5mo

• 2.5.2) Installing these trigger selections

1mo

• 2.5.3) Studies of trigger systematic uncertainties

2mo

• 2.5.4) Development of fitting framework and models

1mo

• 2.5.5) Pseudoexperiment-based fit systematics

1mo

• 2.5.6) Data/MC comparison to Run-2 data

1mo

• 2.6) Data/MC comparisons to Run-3 data

2mo

• 2.7) Obtain luminosity measurement and approximate uncertainty for calculation of cross-section

1mo

• 2.8) Unblinding

1mo

• 2.9) Writing the paper

1mo

▼ 3) WP3: defining the SM with B->DD decays

31,5mo

▼ 3.1) Branching fraction measurements (a Run-2 analysis)

14mo

• 3.1.1) Develop analysis framework (fitting)

2mo

• 3.1.2) Develop common trigger selections to BR, CPV, Phi\_s, Sin2Beta  
includes analysis framework

5mo

• 3.1.3) Develop fit models

2mo

• 3.1.4) Include Run-3 dataset

1mo

• 3.1.5) Systematic uncertainty determination

2mo

• 3.1.6) Unblind

1mo

• 3.1.7) Write paper

1mo

▼ 3.2) Direct CP violation A\_CP

17,5mo

▼ 3.2.1) Time-integrated

7,5mo

Looking at part B2 table 1, charged B modes

Decay	BR	$\sigma(BR)$	$\sigma(\mathcal{CP})$
$B^- \rightarrow D^+D^0$	$3.8 \times 10^{-4}$	6%	$\sigma(A_{CP}) = 1.4\%$
$B^- \rightarrow D_s^+D^0$	$9.0 \times 10^{-3}$	2%	$\sigma(A_{CP}) = 0.4\%$

this is a trivial thing but the detailed production and asymmetry requires detailed study

• 3.2.1.1) Do the same fits as 3.1. but split by charge

0,5mo

• 3.2.1.2) Include 1 yr of Run-3 data

1mo

• 3.2.1.3) Detection and production asymmetry measurements (detailed study)  
the measurements should scale to 14 TeV but the detection asymmetries will require comparisons between different polarities. can do this on MC.

2mo

• 3.2.1.4) Unblind

2mo

• 3.2.1.5) Write paper

2mo

▼ 3.2.2) Time-dependent

10mo

$\bar{B}^0 \rightarrow D_s^+D^0$   
 $\bar{B}_s^0 \rightarrow D^+D_s^-$   
this uses the same dataset as the time-integrated measurements

Decay	BR	$\sigma(BR)$	$\sigma(A_{CP})$
$\bar{B}^0 \rightarrow D_s^+D^0$	$7.2 \times 10^{-3}$	1%	$\sigma(A_{CP}) = 0.4\%$
$\bar{B}_s^0 \rightarrow D^+D_s^-$	$2.8 \times 10^{-4}$	7%	$\sigma(A_{CP}) = 4.1\%$

• 3.2.2.1) Extend fits of previous analysis (3.1.3)

3mo

• 3.2.2.2) Include Run-3 data

0,5mo

• 3.2.2.3) Determine flavor tagging calibration, decay time resolution, decay time acceptance

1,5mo

• 3.2.2.4) Determine systematic uncertainties

2mo

• 3.2.2.5) Unblind

2mo

• 3.2.2.6) Write paper

1mo

▼ 4) WP4: using B->DD to find NP in TD analyses

14,5mo

• 4.1) Develop with theory community updated determination of phi\_s and sin2beta expectations

4mo

▼ 4.2) Phi\_s

5,5mo

• 4.2.1) Adapt fitting framework  
Fits are identical to time-dependent

1mo

• 4.2.2) Include full Run-3 data

0,5mo

• 4.2.3) Determine flavor tagging calibration, decay time resolution, decay time acceptance with full Run-3 data

0,5mo

• 4.2.4) Systematic uncertainties

1mo

• 4.2.5) Unblind

2mo

• 4.2.6) Write paper

0,5mo

▼ 4.3) Sin2Beta

5mo

• 4.3.1) Adapt fitting framework  
Fits are identical to time-dependent

0,5mo

• 4.3.2) Include full Run-3 data

0,5mo

• 4.3.3) Determine flavor tagging calibration, decay time resolution, decay time acceptance with full Run-3 data

0,5mo

• 4.3.4) Systematic uncertainties

1mo

• 4.3.5) Unblind

2mo

• 4.3.6) Write paper

0,5mo

▼ 5) WP5: TD gamma

15mo

• 5.1) Development of fits  
same fits as TD 3.2.2.1

0,5mo

▼ 5.2) TD DsK

7mo

• 5.2.1) Include full Run-3 data

0,5mo

• 5.2.2) Determine flavor tagging calibration, decay time resolution, decay time acceptance

1,5mo

• 5.2.3) Determine systematic uncertainties

1mo

• 5.2.4) Unblind

2mo

• 5.2.5) Extract gamma

1mo

• 5.2.6) Write paper

1mo

▼ 5.3) TD DPi

7mo

• 5.3.1) Include full Run-3 data

0,5mo

• 5.3.2) Determine flavor tagging calibration, decay time resolution, decay time acceptance

1,5mo

• 5.3.3) Determine systematic uncertainties

1mo

• 5.3.4) Unblind

2mo

• 5.3.5) Extract gamma

1mo

• 5.3.6) Write paper

1mo

• 5.4) Write review paper

0,5mo