

# Status report

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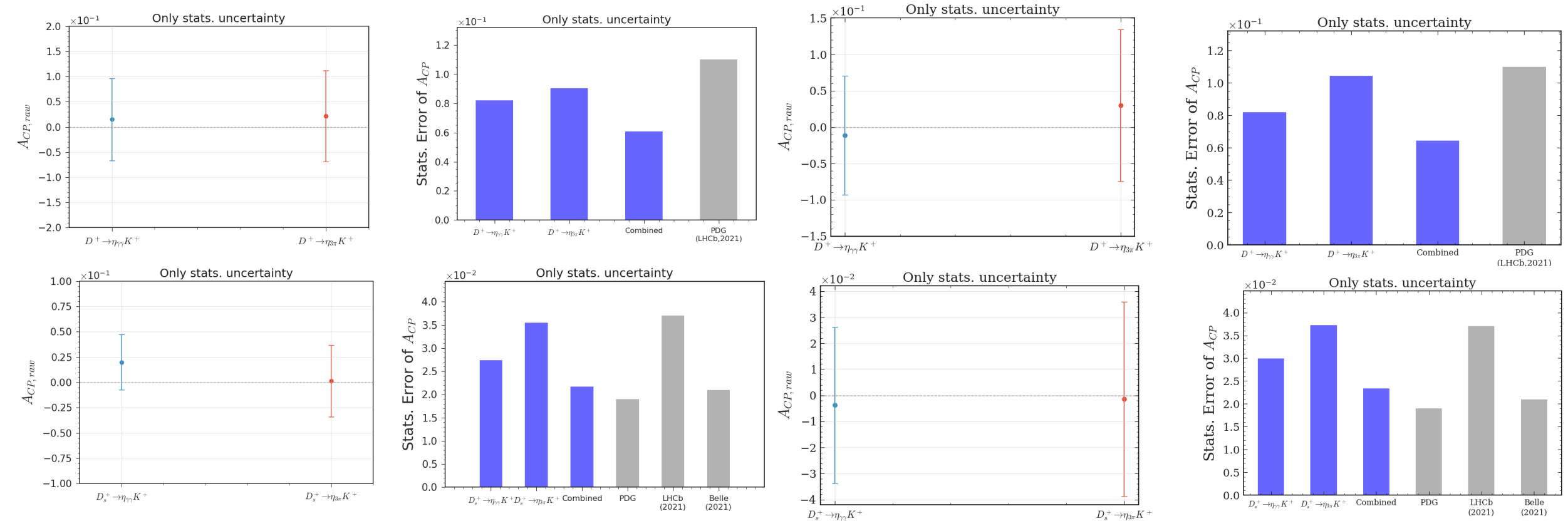
# MC15rd

- Changed to  $\text{pionID} > 0.6 \rightarrow \text{pionIDNN} > 0.6$

What is PIDNN? Nominal pid + track kinematics + ECL cluster variables

- Put  $D_s^+$  signal into BDT training as well
- $D^+ \rightarrow \eta K^+$

MC15ri 427.87/fb scaled



Lightgbm

XGboost

# Acp reference channel

## Original plan

- $D_{(s)}^+ \rightarrow \eta\pi^+ - D^+ \rightarrow K_S^0\pi^+$
- $D_{(s)}^+ \rightarrow \eta K^+ - D^+ \rightarrow K_S^0 K^+$

Mode	$A_{CP}$	$Br$	
$D^+ \rightarrow K_S^0\pi^+$	$-0.0041 \pm 0.0009$	$(1.562 \pm 0.031)\%$	CF(no CPV expected in SM) → FINE
$D_s^+ \rightarrow K_S^0\pi^+$	$0.0020 \pm 0.0018$	$(1.09 \pm 0.05) \cdot 10^{-3}$	SCS
$D^+ \rightarrow K_S^0 K^+$	$-0.0001 \pm 0.0007$	$(3.04 \pm 0.09) \cdot 10^{-3}$	SCS(possible CPV?) → fine?
$D_s^+ \rightarrow K_S^0 K^+$	$0.0009 \pm 0.0026$	$(1.450 \pm 0.035)\%$	CF(no CPV expected in SM)

## Previous study at belle

- $D_{(s)}^+ \rightarrow \eta K^+$

$A_{\epsilon_{K^+}}$  : using efficiency mapping in another analysis

**Backup**