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Title:	Combined analysis of Belle and Belle II data to determine the CKM angle ϕ_3 using $B^+ \rightarrow D(K^0 S^+ h^+) h^+$ decays
Authors:	Patra, Sourav (/jspui/browse?type=author&value=Patra%2C+Sourav)
Keywords:	Combined analysis Belle and Belle CKM angle ϕ_3 $B^+ \rightarrow D(K^0 S^+ h^+) h^+$
Issue Date:	2022
Publisher:	Cornell University
Citation:	Journal of High Energy Physics, 2022(2), 63.
Abstract:	We present a measurement of the Cabibbo-Kobayashi-Maskawa unitarity triangle angle ϕ_3 (also known as γ) using a model-independent Dalitz plot analysis of $B^+ \rightarrow D(K^0 S^+ h^+) h^+$, where D is either a D^0 or D^{*0} meson and h is either a π or K. This is the first measurement that simultaneously uses Belle and Belle-II data, combining samples corresponding to integrated luminosities of $\sqrt{s}(711\text{ fb}^{-1})$ and $\sqrt{s}(128\text{ fb}^{-1})$, respectively. All data were accumulated from energy-asymmetric e^+e^- collisions at a centre-of-mass energy corresponding to the mass of the $Y(4S)$ resonance. We measure $\phi_3 = (78.4 \pm 11.4 \pm 0.5 \pm 1.0)^\circ$, where the first uncertainty is statistical, the second is the experimental systematic uncertainty and the third is from the uncertainties on external measurements of the D-decay strong-phase parameters.
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