

# Measurement of the gamma CKM angle with Belle II

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The CKM angle  $\gamma$  is the least well known of the angles of the unitarity triangle and the only one that is accessible with tree-level decays in a theoretically clean way. It provides a Standard Model benchmark against which other measurements can be compared.

The key method to measure  $\gamma$  is through the interference between  $B^+ \rightarrow D^0 K^+$  and  $B^+ \rightarrow \overline{D}^0 K^+$  decays which occurs if the final state of the charm-meson decay is accessible to both the  $D^0$  and  $\overline{D}^0$  mesons. To achieve the best sensitivity, a large variety of D and B decay modes is required and is possible at Belle II experiment as almost any final state can be reconstructed including those with photons. With a data sample corresponding to an integrated luminosity of  $50 \text{ ab}^{-1}$  expected by 2026, a determination of  $\gamma$  with a precision of 1 degree or better is foreseen. This will approximately match the uncertainty on this parameter from indirect constraints from other measurements.

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