## DISCRETE 2020-2021

Contribution ID: 75

Type: not specified

## **B**- $\bar{\mathrm{B}}$ mixing: decay matrix at high precision

B- $\overline{B}$  mixing involves three observables, the mass difference  $\Delta m$  between the two neutral B eigenstates, their width difference  $\Delta \Gamma$ , and the CP phase characterising CP violation in mixing. The latter two quantities involve the off-diagonal element  $\Gamma_{12}$  of the 2×2 decay matrix  $\Gamma$ . I briefly discuss possible insights into new physics to be gained from a better knowledge of  $\Gamma_{12}$  and then describe the calculation of the Standard-Model prediction of  $\Gamma_{12}$  at next-to-next-to-leading order of QCD. This calculation is necessary to match the experimental precision of the LHCb measurement of  $\Delta\Gamma$  in the B<sub>s</sub> system.

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Session Classification: Plenary

Track Classification: Wednesday