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Decay time resolution measurement for the B0 to Dpi decays

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The decay time resolution is crucial for the determination of CP asymmetries in the time-dependent $B0 \to D^{\pm}\pi^{\mp}$ analysis. In this measurement the decay time resolution was investigated using a sample of reconstructed "fake" B0 candidates selected from the LHCb Run 2 data. A mass fit was performed to suppress the background, and the transverse momentum of the
B0 meson was used to map the data to MC. The final result of the decay time resolution obtained from a second order calibration of the decay time error is $\langle\sigma\rangle$=0.04743±0.00030, which is consistent with the MC . And this result will be incorporated in the final decay time fit to unfold the detector effect, thereby improve the sensitivity to
CP variables.

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