Title: Study of b-quark processes in the Belle experiment

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Abstract: A study regarding the plausibility of using the $B^0 \to D^{*\pm} \rho^{\mp}$ decay channel and the data set of the Belle experiment to measure $\sin(2\phi_1 + \phi_3)$ has been carried out. Two fitters have been created. A time-independent one, which exhibits high stability and reports gratifying fit uncertainties, and a time-dependent one. During the testing of the latter we have discovered an EvtGen flaw and proposed a temporary workaround. Nevertheless, the time-dependent fitter fails to recover the correct values. More work will be needed to reach conclusive results.

Keywords: $B$ meson, CP violation, angular analysis, time-dependent, fitter