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Angular analysis of $B \rightarrow D^{(*)} \ell \nu$ with hadronic tagging at $BABAR$.

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Employing the full $BABAR$ dataset we extract form-factors for $\bar{B} \rightarrow D^{(*)} \ell^m \bar{\nu}_\ell$ using the hadronic tagging method. For $\bar{B} \rightarrow D \ell^m \bar{\nu}_\ell$, a two-dimensional angular analysis is performed in both q^2 and the lepton helicity angle. The two $B \rightarrow D$ form factors are determined using a joint fit with available lattice data. This enables checking flavor SU3 relations using comparisons with HPQCD $B_s \rightarrow D_s$ form-factors. An updated value of V_{cb} from $B \rightarrow D$ is also extracted. The $B \rightarrow D^*$ form-factor fits in the BABAR-19 publication [PRL123 (2019) 9, 091801] are updated, using newly available $w > 1$ lattice data (MILC/FNAL, HPQCD, JLQCD). The $BABAR$ +lattice results are compared with the $BABAR$ -only fits in BABAR-19. Finally, a combined $B \rightarrow D^{(*)}$ fit using the full $BABAR$ data and a HQET parametrization with higher order corrections in $1/m_{b,c}$ are described.

In-person participation

No

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