

Study of $B \rightarrow D^* l \nu$ and $B \rightarrow D l \nu$ decays with a full angular analysis at BABAR

Wednesday, 29 July 2020 16:15 (15 minutes)

We present results on the first full 4-dimensional angular analysis of the $B^- \rightarrow D^* l \nu$ and $B^- \rightarrow D l \nu$ decays, using the e^+e^- collision dataset collected by the *BABAR* experiment at the $\Upsilon(4S)$ resonance. One B meson from the $\Upsilon(4S) \rightarrow B\bar{B}$ decay is fully reconstructed in a hadronic decay mode which constrains the kinematics and provides a precise determination of the neutrino momentum vector. We extract the underlying hadronic form-factors employing the model-independent BGL approach and a value for the *CKM* matrix element $|V_{cb}|$. Last, employing our measured BGL form-factors, we provide new predictions within the Standard Model, for observables related to the semi-tauonic decay $B^- \rightarrow D^* \tau \nu$.

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Secondary track (number)

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Session Classification: Quark and Lepton Flavour Physics

Track Classification: 05. Quark and Lepton Flavour Physics