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Title:	Measurements of q(2) moments of inclusive B -> X(c)l(+)upsilon(l) decays with hadronic tagging.
Authors:	Bhardwaj, Vishal (/jspui/browse?type=author&value=Bhardwaj%2C+Vishal) Patra, Sourav (/jspui/browse?type=author&value=Patra%2C+Sourav)
Keywords:	Particle data analysis Precision measurements
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Abstract:	We present the measurement of the first to fourth order moments of the four-momentum transfer squared, q2, of inclusive B → Xclþνl decays using the full Belle dataset of 711 fb−1 of integrated luminosity at the Υð4SÞ resonance where l ¼ e, μ. The determination of these moments and their systematic uncertainties open new pathways to determine the absolute value of the Cabibbo-Kobayashi-Maskawa matrix element Vcb using a reduced set of matrix elements of the heavy quark expansion. In order to identify and reconstruct the Xc system, we reconstruct one of the two B-mesons using machine learning techniques in fully hadronic decay modes. The moments are measured with progressively increasing threshold selections on q2 starting with a lower value of 3.0 GeV2 in steps of 0.5 GeV2 up to a value of 10.0 GeV2. The measured moments are further unfolded, correcting for reconstruction and selection effects as well as QED final state radiation. We report the moments separately for electron and muon final states and observe no lepton flavor universality violating effect
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