Title:	Test of lepton flavor universality and search for lepton flavor violation in B → Kℓℓ decays
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Abstract:	We present measurements of the branching fractions for the decays B → Kμ+μ− and B → Ke+e−, and their ratio (RK), using a data sample of 711 fb−1 that contains 772 × 106 $B\bar{B}$ events. The data were collected at the Υ(4S) resonance with the Belle detector at the KEKB asymmetric-energy e+e− collider. The ratio RK is measured in five bins of dilepton invariant-mass-squared (q2): q2 ∈ (0.1, 4.0), (4.00, 8.12), (1.0, 6.0), (10.2, 12.8) and (> 14.18) GeV2/c4, along with the whole q2 region. The RK value for q2 ∈ (1.0, 6.0) GeV2/c4 is 1.03+0.28−0.24 ± 0.01. The first and second uncertainties listed are statistical and systematic, respectively. All results for RK are consistent with Standard Model predictions. We also measure CP-averaged isospin asymmetries in the same q2 bins. The results are consistent with a null asymmetry, with the largest difference of 2.6 standard deviations occurring for the q2 ∈ (1.0, 6.0) GeV2/c4 bin in the mode with muon final states. The measured differential branching fractions, dB/dq2, are consistent with theoretical predictions for charged B decays, while the corresponding values are below the expectations for neutral B decays. We have also searched for lepton-flavor-violating B → Kμ±e∓ decays and set 90% confidence-level upper limits on the branching fraction in the range of 10−8 for B+ → K+μ±e∓, and B0 → K0μ±e∓ modes.
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