Title:	Study of electromagnetic decays of orbitally excited Ξc baryons
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Abstract:	Using 980 fb-1 of data collected with the Belle detector operating at the KEKB asymmetric-energy e+e- collider, we report a study of the electromagnetic decays of excited charmed baryons Ξc(2790) and Ξc(2815). A clear signal (8.6 standard deviations) is observed for Ξc(2815)0→Ξc0γ, and we measure: B[Ξc(2815)0 → Ξc0γ]B[Ξc(2815)0 → Ξc(2645)+π- → Ξc0π+π-]=0.41±0.05±0.03. We also present evidence (3.8 standard deviations) for the similar decay of the Ξc(2790)0 and measure: B[Ξc(2790)0 → Ξc0γ]B[Ξc(2790)0 → Ξc′+π- → Ξc+γπ-]=0.13±0.03±0.02. The first quoted uncertainties are statistical and the second systematic. We find no hint of the analogous decays of the Ξc(2815)+ and Ξc(2790)+ baryons and set upper limits at the 90% confidence level of: B[Ξc(2815)+ → Ξc+γ]B[Ξc(2815)+ → Ξc(2645)0π+ → Ξc+π-π+]<0.09, and B[Ξc(2790)+ → Ξc+γ]B[Ξc(2790)+ → Ξc′0π+ → Ξc0γπ+]<0.06. Approximate values of the partial widths of the decays are extracted, which can be used to discriminate between models of the underlying quark structure of these excited states. © 2020 authors. Published by the American Physical Society. Published by the American Physical Society under the terms of the "https://creativecommons.org/licenses/by/4.0/"Creative Commons Attribution 4.0 International license.
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