Recent Results of Bottomonium Spectroscopy in Radiative $\Upsilon(2S)$ Decays at Belle

ZACHARY STOTTLER, Virginia Polytechnic Institute and State University, BELLE COLLABORATION — We report on the recent results of a search for $\Upsilon(2S) \to (b\bar{b})\gamma$ decays. We characterize the properties of $\chi_{bJ}(1P)$ ($J = 0, 1, 2$) mesons, which are reconstructed from 74 hadronic final states containing charged and neutral pions, kaons, protons. In total, we observe 41 modes with a significance at or above $5\sigma$, many of which are first observations. Our results are based on an integrated luminosity of $24.7fb^{-1}$ of $e^+e^-$ collision data recorded by the Belle detector at the $\Upsilon(2S)$ resonance, corresponding to $(157.8 \pm 3.6) \times 10^6 \Upsilon(2S)$ events.

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