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Title:	Observation of a new structure near 10.75 GeV in the energy dependence of the $e^+e^- \rightarrow Y(nS)\pi^+\pi^-$ ($n = 1, 2, 3$) cross sections
Authors:	Bhardwaj, V. (/jspui/browse?type=author&value=Bhardwaj%2C+V.)
Keywords:	e^+e^- Experiments Quarkonium Spectroscopy
Issue Date:	2019
Publisher:	Springer Link
Citation:	Journal of High Energy Physics, 2019(10).
Abstract:	We report a new measurement of the $e^+e^- \rightarrow Y(nS)\pi^+\pi^-$ ($n = 1, 2, 3$) cross sections at energies from 10.52 to 11.02 GeV using data collected with the Belle detector at the KEKB asymmetric-energy e^+e^- collider. We observe a new structure in the energy dependence of the cross sections; if described by a Breit-Wigner function its mass and width are found to be $M = (10752.7 \pm 5.9 + 0.7 - 1.1) \text{ MeV}/c^2$ and $\Gamma = (35.5 + 17.6 + 3.9 - 11.3 - 3.3) \text{ MeV}$, where the first error is statistical and the second is systematic. The global significance of the new structure including systematic uncertainty is 5.2 standard deviations. We also find evidence for the $e^+e^- \rightarrow Y(1S)\pi^+\pi^-$ process at the energy 10.52 GeV, which is below the $B\bar{B}$ threshold.
Description:	Only IISERM authors are available in the record.
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Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

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