



# Library Indian Institute of Science Education and Research Mohali



**DSpace@IISERMohali (/jspui/)**

**/ Publications of IISER Mohali (/jspui/handle/123456789/4)**

**/ Research Articles (/jspui/handle/123456789/9)**

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/2093>

Title:	Production cross sections of hyperons and charmed baryons from $e^+e^-$ annihilation near $\sqrt{s} = 10.52$ GeV
Authors:	Bhardwaj, V. (/jspui/browse?type=author&value=Bhardwaj%2C+V.)
Keywords:	$\sqrt{s} = 10.52$ GeV Hyperons Baryons Quantum Chromodynamics
Issue Date:	2018
Publisher:	American Physical Society
Citation:	Physical Review D, 97(7).
Abstract:	<p>We measure the inclusive production cross sections of hyperons and charmed baryons from <math>e^+e^-</math> annihilation using a 800 fb<sup>-1</sup> data sample taken near the (4S) resonance with the Belle detector at the KEKB asymmetric-energy <math>e^+e^-</math> collider. The feed-down contributions from heavy particles are subtracted using our data, and the direct production cross sections are presented for the first time. The production cross sections divided by the number of spin states for <math>S=-1</math> hyperons follow an exponential function with a single slope parameter except for the <math>\Sigma(1385)^+</math> resonance. Suppression for <math>\Sigma(1385)^+</math> and <math>\Xi(1530)^0</math> hyperons is observed. Among the production cross sections of charmed baryons, a factor of 3 difference for <math>\Lambda_c^+</math> states over <math>\Sigma_c</math> states is observed. This observation suggests a diquark structure for these baryons. © 2018 authors. Published by the American Physical Society. Published by the American Physical Society under the terms of the »<a href="https://creativecommons.org/licenses/by/4.0/">https://creativecommons.org/licenses/by/4.0/</a>» Creative Commons Attribution 4.0 International license. Further distribution of this work must maintain attribution to the author(s) and the published article's title, journal citation, and DOI. Funded by SCOAP<sup>3</sup>.</p>
Description:	Only IISERM authors are available in the record.
URI:	<a href="https://journals.aps.org/prd/abstract/10.1103/PhysRevD.97.072005">https://journals.aps.org/prd/abstract/10.1103/PhysRevD.97.072005</a> ( <a href="https://journals.aps.org/prd/abstract/10.1103/PhysRevD.97.072005">https://journals.aps.org/prd/abstract/10.1103/PhysRevD.97.072005</a> ) <a href="http://hdl.handle.net/123456789/2093">http://hdl.handle.net/123456789/2093</a> ( <a href="http://hdl.handle.net/123456789/2093">http://hdl.handle.net/123456789/2093</a> )
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format
Need to add pdf.odt (/jspui/bitstream/123456789/2093/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text

[View/Open \(/jspui/bitstream/123456789/2093/1/Need%20to%20add%20pdf.odt\)](#)

[Show full item record \(/jspui/handle/123456789/2093?mode=full\)](#)

[Statistics \(/jspui/handle/123456789/2093/statistics\)](#)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.