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Supplemental figures:
**“Multiplicity dependence of (multi-)strange hadron production in
proton-proton collisions at $\sqrt{s} = 13$ TeV”**

The ALICE Collaboration*

Abstract

This public note presents supplemental figures accompanying the publication [1]. The production rates and the transverse momentum distributions of K_S^0 , Λ , Ξ and Ω at midrapidity ($|y| < 0.5$) were measured in proton-proton collisions at $\sqrt{s} = 13$ TeV as a function of the charged particle multiplicity, using the ALICE detector at the LHC. In this public note the particle ratios $(\Lambda + \bar{\Lambda}) / 2K_S^0$ are measured in the same multiplicity event classes presented in [1], based on multiplicity estimators covering different pseudorapidity regions.

The K_S^0 and $(\Lambda + \bar{\Lambda})$ transverse momentum spectra published in Ref. [1] were computed in p_T ranges incompatible with each other, preventing the calculation of the ratios $(\Lambda + \bar{\Lambda}) / 2K_S^0$ starting directly from published spectra. Therefore, the K_S^0 spectra are recomputed in order to match the transverse momentum ranges used for Λ and $\bar{\Lambda}$ spectra.

The $(\Lambda + \bar{\Lambda}) / 2K_S^0$ are calculated in multiplicity event classes selected according to the multiplicity estimators described in Ref. [1], based on the total charge deposited in the V0 detectors (V0M) or on the number of tracklets in two pseudorapidity regions, namely $|\eta| < 0.8$ ($N_{\text{tracklets}}^{|\eta| < 0.8}$) and $0.8 < |\eta| < 1.5$ ($N_{\text{tracklets}}^{0.8 < |\eta| < 1.5}$). For the computation of the systematic uncertainty of the ratio, the selection variables are changed as described in Ref. [1] simultaneously for K_S^0 and $(\Lambda + \bar{\Lambda})$ and the resulting variations of the ratio are considered. The event normalization factors, as well as the corresponding systematic uncertainties, cancel out in the particle ratios.

The $(\Lambda + \bar{\Lambda}) / 2K_S^0$ ratios are summarised in Fig. 1, Fig. 2 and Fig. 3 in the same multiplicity event classes as discussed in Ref. [1] based on V0M, $N_{\text{tracklets}}^{|\eta| < 0.8}$ and $N_{\text{tracklets}}^{0.8 < |\eta| < 1.5}$ estimators, respectively. The corresponding ratios for the INEL > 0 data sample are also shown on each plot.

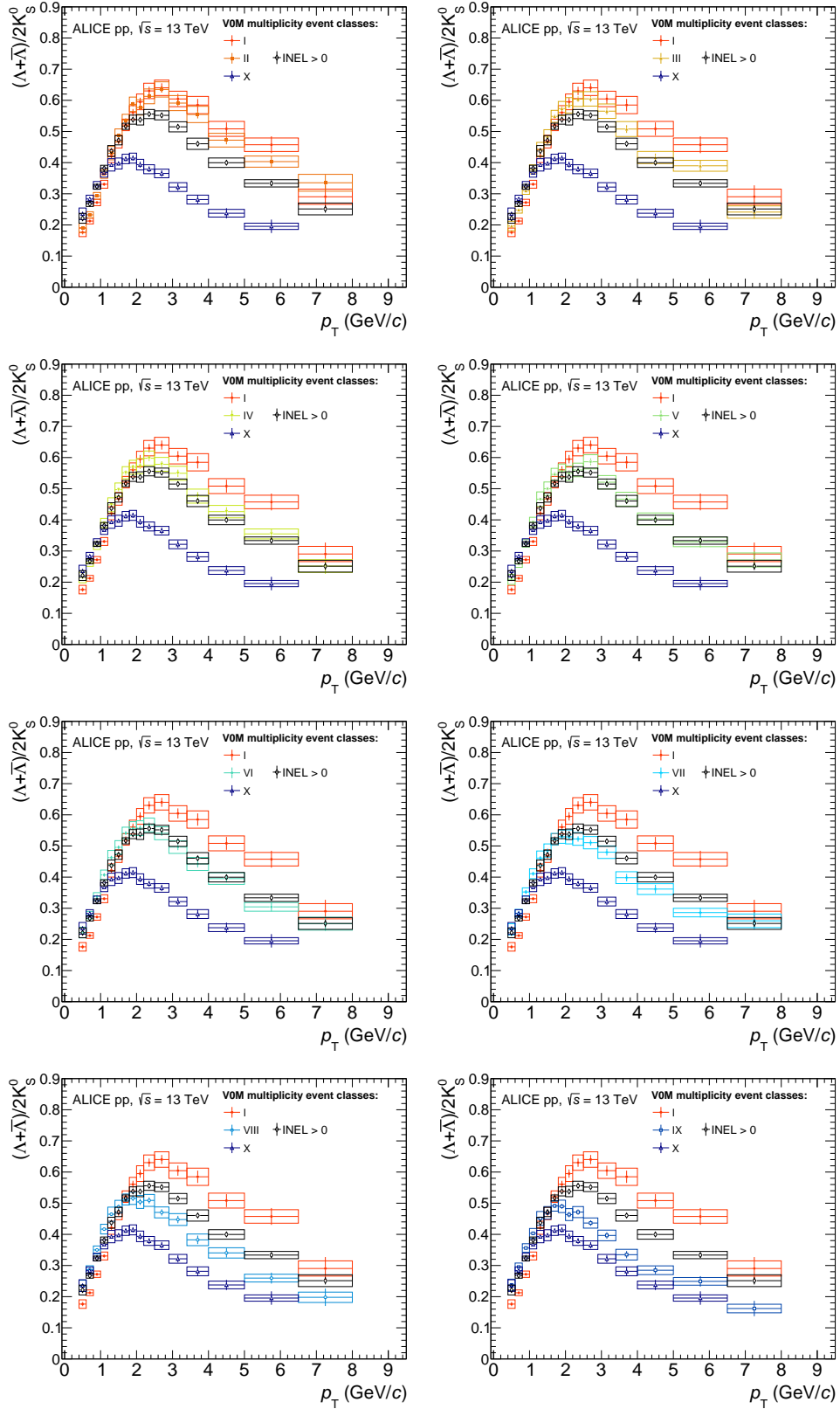


Figure 1: $(\Lambda + \bar{\Lambda})/2K_S^0$ ratios in different event classes selected according to VOM multiplicity. The corresponding ratios for INEL>0, as well as the lowest and the highest VOM multiplicity event classes, are shown on each panel for reference.

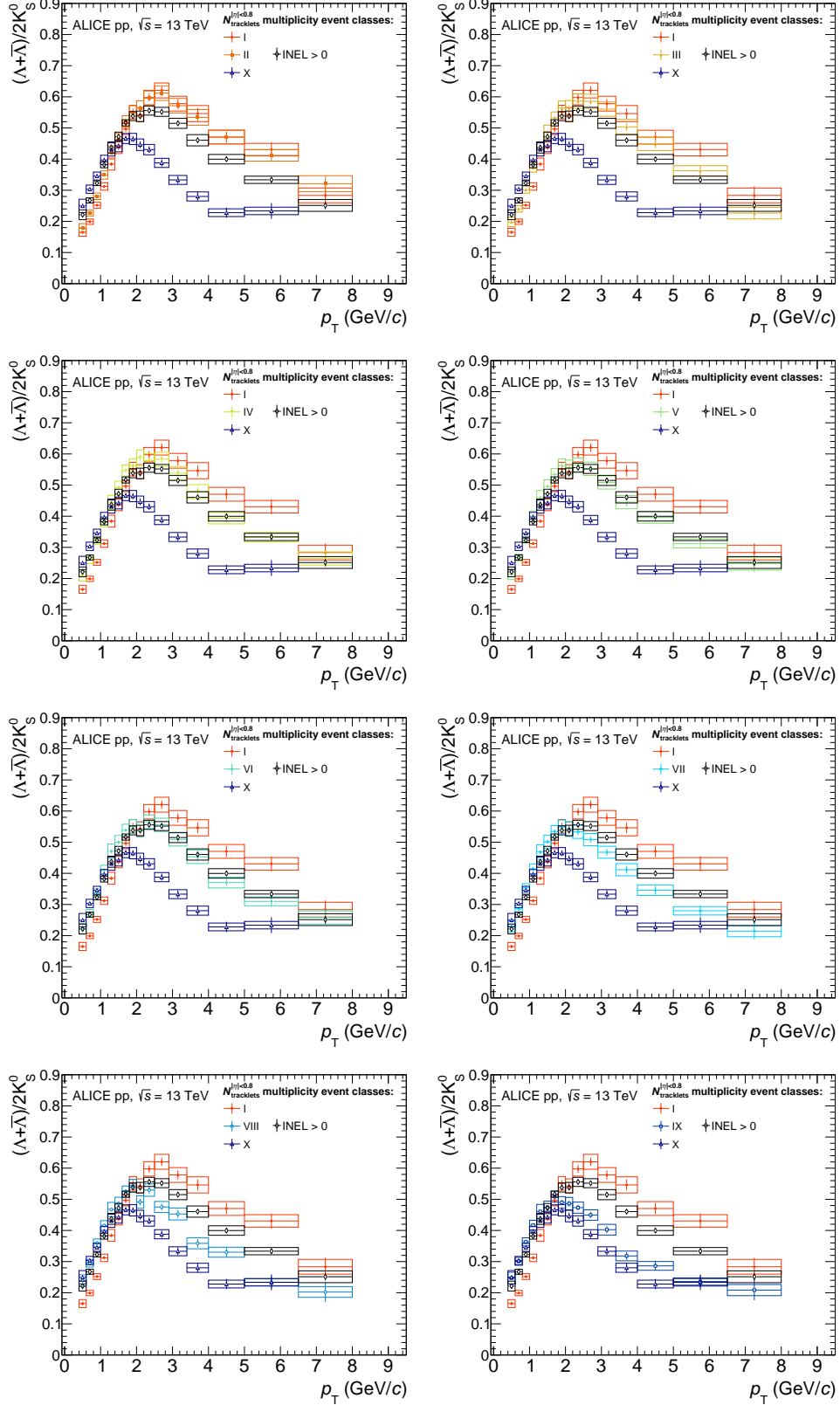


Figure 2: $(\Lambda + \bar{\Lambda}) / 2K_S^0$ ratios in different event classes selected according to $N_{\text{tracklets}}^{|\eta|<0.8}$ multiplicity. The corresponding ratios for INEL>0, as well as the lowest and the highest $N_{\text{tracklets}}^{|\eta|<0.8}$ multiplicity event classes, are shown on each panel for reference.

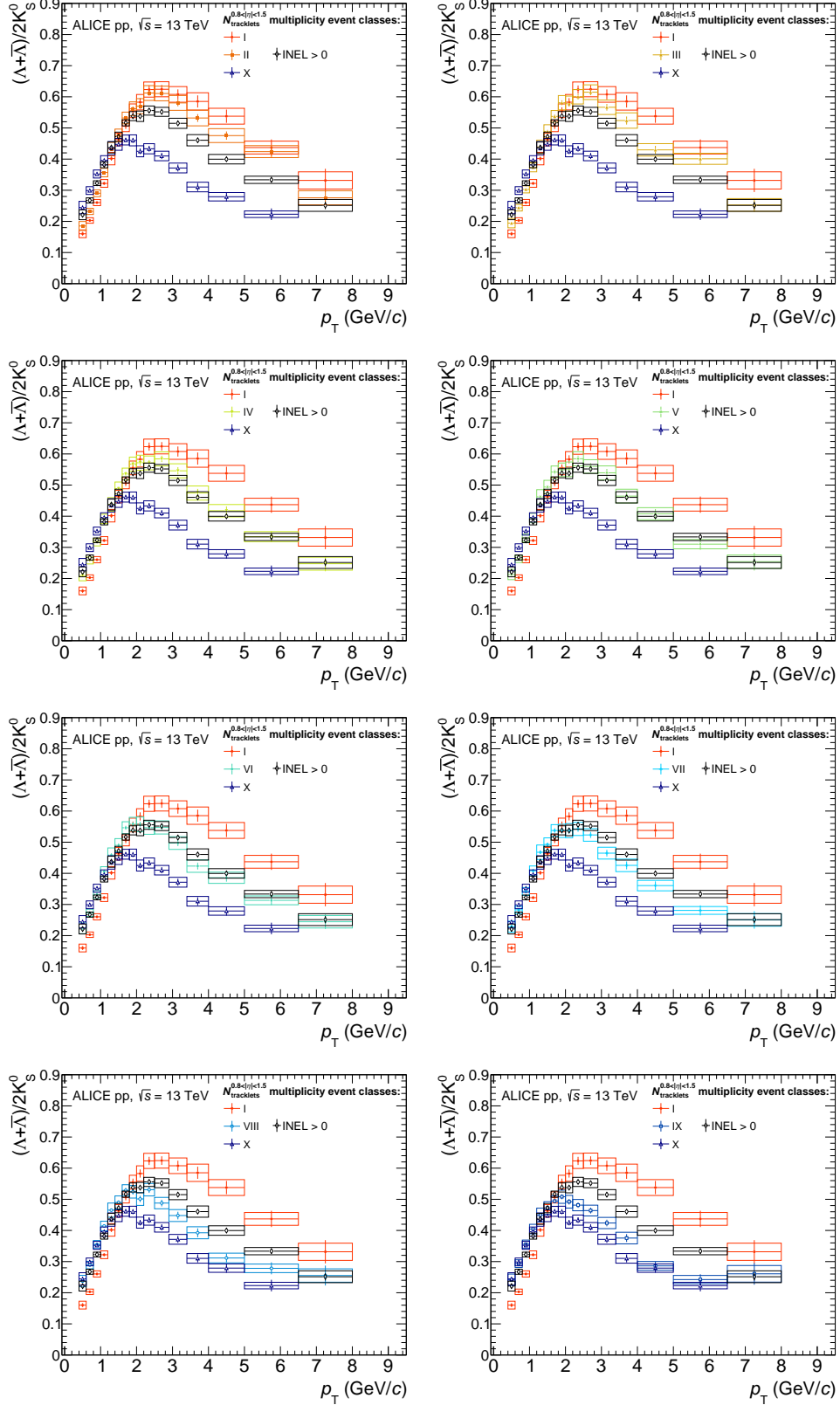


Figure 3: $(\Lambda + \bar{\Lambda}) / 2K_s^0$ ratios in different event classes selected according to $N_{\text{tracklets}}^{0.8 < |\eta| < 1.5}$ multiplicity. The corresponding ratios for INEL > 0, as well as the lowest and the highest $N_{\text{tracklets}}^{0.8 < |\eta| < 1.5}$ multiplicity event classes, are shown on each panel for reference.

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A The ALICE Collaboration

S. Acharya¹⁴¹, D. Adamová⁹³, S.P. Adhya¹⁴¹, A. Adler⁷³, J. Adolfsson⁷⁹, M.M. Aggarwal⁹⁸, G. Aglieri Rinella³⁴, M. Agnello³¹, N. Agrawal^{10, 48, 53}, Z. Ahammed¹⁴¹, S. Ahmad¹⁷, S.U. Ahn⁷⁵, A. Akindinov⁹⁰, M. Al-Turany¹⁰⁵, S.N. Alam¹⁴¹, D.S.D. Albuquerque¹²², D. Aleksandrov⁸⁶, B. Alessandro⁵⁸, H.M. Alfanda⁶, R. Alfaro Molina⁷¹, B. Ali¹⁷, Y. Ali¹⁵, A. Alici^{10, 27, 53}, A. Alkin², J. Alme²², T. Alt⁶⁸, L. Altenkamper²², I. Altsybeev¹¹², M.N. Anaam⁶, C. Andrei⁴⁷, D. Andreou³⁴, H.A. Andrews¹⁰⁹, A. Andronic¹⁴⁴, M. Angeletti³⁴, V. Anguelov¹⁰², C. Anson¹⁶, T. Antičić¹⁰⁶, F. Antinori⁵⁶, P. Antonioli⁵³, R. Anwar¹²⁵, N. Apadula⁷⁸, L. Aphecetche¹¹⁴, H. Appelshäuser⁶⁸, S. Arcelli²⁷, R. Arnaldi⁵⁸, M. Arratia⁷⁸, I.C. Arsene²¹, M. Arslanok¹⁰², A. Augustinus³⁴, R. Averbeck¹⁰⁵, S. Aziz⁶¹, M.D. Azmi¹⁷, A. Badalà⁵⁵, Y.W. Baek⁴⁰, S. Bagnasco⁵⁸, X. Bai¹⁰⁵, R. Bailhache⁶⁸, R. Bala⁹⁹, A. Baldisseri¹³⁷, M. Ball⁴², S. Balouza¹⁰³, R.C. Baral⁸⁴, R. Barbera²⁸, L. Barioglio²⁶, G.G. Barnaföldi¹⁴⁵, L.S. Barnby⁹², V. Barret¹³⁴, P. Bartalini⁶, K. Barth³⁴, E. Bartsch⁶⁸, F. Baruffaldi²⁹, N. Bastid¹³⁴, S. Basu¹⁴³, G. Batigne¹¹⁴, B. Batyunya⁷⁴, P.C. Batzing²¹, D. Bauri⁴⁸, J.L. Bazo Alba¹¹⁰, I.G. Bearden⁸⁷, C. Bedda⁶³, N.K. Behera⁶⁰, I. Belikov¹³⁶, F. Bellini³⁴, R. Bellwied¹²⁵, V. Belyaev⁹¹, G. Bencedi¹⁴⁵, S. Beole²⁶, A. Bercuci⁴⁷, Y. Berdnikov⁹⁶, D. Berenyi¹⁴⁵, R.A. Bertens¹³⁰, D. Berzano⁵⁸, M.G. Besoiu⁶⁷, L. Betev³⁴, A. Bhasin⁹⁹, I.R. Bhat⁹⁹, M.A. Bhat³, H. Bhatt⁴⁸, B. Bhattacharjee⁴¹, A. Bianchi²⁶, L. Bianchi²⁶, N. Bianchi⁵¹, J. Bielčič³⁷, J. Bielčiková⁹³, A. Bilandžić^{103, 117}, G. Biro¹⁴⁵, R. Biswas³, S. Biswas³, J.T. Blair¹¹⁹, D. Blau⁸⁶, C. Blume⁶⁸, G. Boca¹³⁹, F. Bock^{34, 94}, A. Bogdanov⁹¹, L. Boldizsár¹⁴⁵, A. Bolozdynya⁹¹, M. Bombara³⁸, G. Bonomi¹⁴⁰, H. Borel¹³⁷, A. Borissov^{91, 144}, M. Borri¹²⁷, H. Bossi¹⁴⁶, E. Botta²⁶, L. Bratrud⁶⁸, P. Braun-Munzinger¹⁰⁵, M. Bregant¹²¹, T.A. Broker⁶⁸, M. Broz³⁷, E.J. Brucken⁴³, E. Bruna⁵⁸, G.E. Bruno^{33, 104}, M.D. Buckland¹²⁷, D. Budnikov¹⁰⁷, H. Buesching⁶⁸, S. Bufalino³¹, O. Bugnon¹¹⁴, P. Buhler¹¹³, P. Buncic³⁴, Z. Buthelezi⁷², J.B. Butt¹⁵, J.T. Buxton⁹⁵, S.A. Bysiak¹¹⁸, D. Caffarri⁸⁸, A. Caliva¹⁰⁵, E. Calvo Villar¹¹⁰, R.S. Camacho⁴⁴, P. Camerini²⁵, A.A. Capon¹¹³, F. Carnesecchi^{10, 27}, J. Castillo Castellanos¹³⁷, A.J. Castro¹³⁰, E.A.R. Casula⁵⁴, F. Catalano³¹, C. Ceballos Sanchez⁵², P. Chakraborty⁴⁸, S. Chandra¹⁴¹, B. Chang¹²⁶, W. Chang⁶, S. Chapeland³⁴, M. Chartier¹²⁷, S. Chattopadhyay¹⁴¹, S. Chattopadhyay¹⁰⁸, A. Chauvin²⁴, C. Cheshkov¹³⁵, B. Cheynis¹³⁵, V. Chibante Barroso³⁴, D.D. Chinellato¹²², S. Cho⁶⁰, P. Chochula³⁴, T. Chowdhury¹³⁴, P. Christakoglou⁸⁸, C.H. Christensen⁸⁷, P. Christiansen⁷⁹, T. Chujo¹³³, C. Cicalo⁵⁴, L. Cifarelli^{10, 27}, F. Cindolo⁵³, J. Cleymans¹²⁴, F. Colamaria⁵², D. Colella⁵², A. Collu⁷⁸, M. Colocci²⁷, M. Concas^{58, ii}, G. Conesa Balbastre⁷⁷, Z. Conesa del Valle⁶¹, G. Contin^{59, 127}, J.G. Contreras³⁷, T.M. Cormier⁹⁴, Y. Corrales Morales^{26, 58}, P. Cortese³², M.R. Cosentino¹²³, F. Costa³⁴, S. Costanza¹³⁹, P. Crochet¹³⁴, E. Cuautele⁶⁹, P. Cui⁶, L. Cunqueiro⁹⁴, D. Dabrowski¹⁴², T. Dahms^{103, 117}, A. Dainese⁵⁶, F.P.A. Damas^{114, 137}, S. Dani⁶⁵, M.C. Danisch¹⁰², A. Danu⁶⁷, D. Das¹⁰⁸, I. Das¹⁰⁸, P. Das³, S. Das³, A. Dash⁸⁴, S. Dash⁴⁸, A. Dashi¹⁰³, S. De^{49, 84}, A. De Caro³⁰, G. de Cataldo⁵², C. de Conti¹²¹, J. de Cuveland³⁹, A. De Falco²⁴, D. De Gruttola¹⁰, N. De Marco⁵⁸, S. De Pasquale³⁰, R. Derradi de Souza¹²², S. Deb⁴⁹, H.F. Degenhardt¹²¹, K.R. Deja¹⁴², A. Deloff⁸³, S. Delsanto^{26, 131}, D. Devetak¹⁰⁵, P. Dhankher⁴⁸, D. Di Bari³³, A. Di Mauro³⁴, R.A. Diaz⁸, T. Dietel¹²⁴, P. Dillenseger⁶⁸, Y. Ding⁶, R. Diviã³⁴, Ø. Djuvsland²², U. Dmitrieva⁶², A. Dobrin^{34, 67}, B. Dönigus⁶⁸, O. Dordic²¹, A.K. Dubey¹⁴¹, A. Dubla¹⁰⁵, S. Dudi⁹⁸, M. Dukhishyam⁸⁴, P. Dupieux¹³⁴, R.J. Ehlers¹⁴⁶, V.N. Eikeland²², D. Elia⁵², H. Engel⁷³, E. Eppe¹⁴⁶, B. Erasmus¹¹⁴, F. Erhardt⁹⁷, A. Erokhin¹¹², M.R. Ersdal²², B. Espagnon⁶¹, G. Eulisse³⁴, J. Eum¹⁸, D. Evans¹⁰⁹, S. Evdokimov⁸⁹, L. Fabbietti^{103, 117}, M. Faggin²⁹, J. Faivre⁷⁷, F. Fan⁶, A. Fantoni⁵¹, M. Fasel⁹⁴, P. Fecchio³¹, A. Feliciello⁵⁸, G. Feofilov¹¹², A. Fernández Téllez⁴⁴, A. Ferrero¹³⁷, A. Ferretti²⁶, A. Festanti³⁴, V.J.G. Feuillard¹⁰², J. Figiel¹¹⁸, S. Filchagin¹⁰⁷, D. Finogeev⁶², F.M. Fionda²², G. Fiorenza⁵², F. Flor¹²⁵, M. Floris³⁴, S. Foertsch⁷², P. Foka¹⁰⁵, S. Fokin⁸⁶, E. Fragiaco⁵⁹, U. Frankenfeld¹⁰⁵, G.G. Fronze²⁶, U. Fuchs³⁴, C. Furget⁷⁷, A. Furs⁶², M. Fusco Girard³⁰, J.J. Gaardhøje⁸⁷, M. Gagliardi²⁶, A.M. Gago¹¹⁰, A. Gal¹³⁶, C.D. Galvan¹²⁰, P. Ganoti⁸², C. Garabatos¹⁰⁵, E. Garcia-Solis¹¹, K. Garg²⁸, C. Gargiulo³⁴, A. Garibli⁸⁵, K. Garner¹⁴⁴, P. Gasik^{103, 117}, E.F. Gauger¹¹⁹, M.B. Gay Ducati⁷⁰, M. Germain¹¹⁴, J. Ghosh¹⁰⁸, P. Ghosh¹⁴¹, S.K. Ghosh³, P. Gianotti⁵¹, P. Giubellino^{58, 105}, P. Giubilato²⁹, P. Gläsel¹⁰², D.M. Gómez Coral⁷¹, A. Gomez Ramirez⁷³, V. Gonzalez¹⁰⁵, P. González-Zamora⁴⁴, S. Gorbunov³⁹, L. Görlich¹¹⁸, S. Gotovac³⁵, V. Grabski⁷¹, L.K. Graczykowski¹⁴², K.L. 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S. Hornung¹⁰⁵, R. Hosokawa^{16,133}, P. Hristov³⁴, C. Huang⁶¹, C. Hughes¹³⁰, P. Huhn⁶⁸, T.J. Humanic⁹⁵, H. Hushnud¹⁰⁸, L.A. Husova¹⁴⁴, N. Hussain⁴¹, S.A. Hussain¹⁵, D. Hutter³⁹, D.S. Hwang¹⁹, J.P. Iddon^{34,127}, R. Ilkaev¹⁰⁷, M. Inaba¹³³, M. Ippolitov⁸⁶, M.S. Islam¹⁰⁸, M. Ivanov¹⁰⁵, V. Ivanov⁹⁶, V. Izucheev⁸⁹, B. Jacak⁷⁸, N. Jacazio^{27,53}, P.M. Jacobs⁷⁸, M.B. Jadhav⁴⁸, S. Jadlovská¹¹⁶, J. Jadlovsky¹¹⁶, S. Jaelani⁶³, C. Jahnke¹²¹, M.J. Jakubowska¹⁴², M.A. Janik¹⁴², M. Jercic⁹⁷, O. Jevons¹⁰⁹, R.T. Jimenez Bustamante¹⁰⁵, M. Jin¹²⁵, F. Jonas^{94,144}, P.G. Jones¹⁰⁹, A. Jusko¹⁰⁹, P. Kalinak⁶⁴, A. Kalweit³⁴, J.H. Kang¹⁴⁷, V. Kaplin⁹¹, S. Kar⁶, A. Karasu Uysal⁷⁶, O. Karavichev⁶², T. Karavicheva⁶², P. Karczmarczyk³⁴, E. Karpechev⁶², U. Keschull⁷³, R. Keidel⁴⁶, M. Keil³⁴, B. Ketzer⁴², Z. Khabanova⁸⁸, A.M. Khan⁶, S. Khan¹⁷, S.A. Khan¹⁴¹, A. Khanzadeev⁹⁶, Y. Kharlov⁸⁹, A. Khatun¹⁷, A. Khuntia¹¹⁸, B. Kileng³⁶, B. Kim⁶⁰, B. Kim¹³³, D. Kim¹⁴⁷, D.J. Kim¹²⁶, E.J. Kim¹³, H. Kim¹⁴⁷, J. Kim¹⁴⁷, J.S. Kim⁴⁰, J. Kim¹⁰², J. Kim¹⁴⁷, J. Kim¹³, M. Kim¹⁰², S. Kim¹⁹, T. Kim¹⁴⁷, T. Kim¹⁴⁷, S. Kirsch³⁹, I. Kisel³⁹, S. Kiselev⁹⁰, A. Kisiel¹⁴², J.L. Klay⁵, C. Klein⁶⁸, J. Klein⁵⁸, S. Klein⁷⁸, C. Klein-Bösing¹⁴⁴, S. Klewin¹⁰², A. Kluge³⁴, M.L. Knichel^{34,102}, A.G. Knospe¹²⁵, C. Kobdaj¹¹⁵, M.K. Köhler¹⁰², T. Kollegger¹⁰⁵, A. Kondratyev⁷⁴, N. Kondratyeva⁹¹, E. Kondratyuk⁸⁹, P.J. Konopka³⁴, L. Koska¹¹⁶, O. Kovalenko⁸³, V. Kovalenko¹¹², M. Kowalski¹¹⁸, I. Králik⁶⁴, A. Kravčáková³⁸, L. Kreis¹⁰⁵, M. Krivda^{64,109}, F. Krizek⁹³, K. Krizkova Gajdosova³⁷, M. Krüger⁶⁸, E. Kryshen⁹⁶, M. Krzewicki³⁹, A.M. Kubera⁹⁵, V. Kučera⁶⁰, C. Kuhn¹³⁶, P.G. Kuijter⁸⁸, L. Kumar⁹⁸, S. Kumar⁴⁸, S. Kundu⁸⁴, P. Kurashvili⁸³, A. Kurepin⁶², A.B. Kurepin⁶², A. Kuryakin¹⁰⁷, S. Kushpil⁹³, J. Kvapil¹⁰⁹, M.J. Kwon⁶⁰, J.Y. Kwon⁶⁰, Y. Kwon¹⁴⁷, S.L. La Pointe³⁹, P. La Rocca²⁸, Y.S. Lai⁷⁸, R. Langoy¹²⁹, K. Lapidus^{34,146}, A. Lardeux²¹, P. Larionov⁵¹, E. Laudi³⁴, R. Lavicka³⁷, T. Lazareva¹¹², R. Lea²⁵, L. Leardini¹⁰², S. Lee¹⁴⁷, F. Lehas⁸⁸, S. Lehner¹¹³, J. Lehrbach³⁹, R.C. Lemmon⁹², I. León Monzón¹²⁰, E.D. Lesser²⁰, M. Lettrich³⁴, P. Lévai¹⁴⁵, X. Li¹², X.L. Li⁶, J. Lien¹²⁹, R. Lietava¹⁰⁹, B. Lim¹⁸, S. Lindal²¹, V. Lindenstruth³⁹, S.W. Lindsay¹²⁷, C. Lippmann¹⁰⁵, M.A. Lisa⁹⁵, V. Litichevskiy⁴³, A. Liu⁷⁸, S. Liu⁹⁵, W.J. Llope¹⁴³, I.M. Lofnes²², V. Loginov⁹¹, C. Loizides⁹⁴, P. Loncar³⁵, X. Lopez¹³⁴, E. López Torres⁸, P. Luettig⁶⁸, J.R. Luhder¹⁴⁴, M. Lunardon²⁹, G. Luparello⁵⁹, A. Maevskaya⁶², M. Mager³⁴, S.M. Mahmood²¹, T. Mahmoud⁴², A. Maire¹³⁶, R.D. Majka¹⁴⁶, M. Malaev⁹⁶, Q.W. Malik²¹, L. Malinina^{74,iii}, D. Mal'Kevich⁹⁰, P. Malzacher¹⁰⁵, G. Mandaglio⁵⁵, V. Manko⁸⁶, F. Manso¹³⁴, V. Manzari⁵², Y. Mao⁶, M. Marchisone¹³⁵, J. Mareš⁶⁶, G.V. Margagliotti²⁵, A. Margotti⁵³, J. Margutti⁶³, A. Marín¹⁰⁵, C. Markert¹¹⁹, M. Marquard⁶⁸, N.A. Martin¹⁰², P. Martinengo³⁴, J.L. Martinez¹²⁵, M.I. Martínez⁴⁴, G. Martínez García¹¹⁴, M. Martinez Pedreira³⁴, S. Masciocchi¹⁰⁵, M. Masera²⁶, A. Masoni⁵⁴, L. Massacrier⁶¹, E. Masson¹¹⁴, A. Mastroserio^{52,138}, A.M. Mathis^{103,117}, O. Matonoha⁷⁹, P.F.T. Matuoka¹²¹, A. Matyja¹¹⁸, C. Mayer¹¹⁸, M. Mazzilli³³, M.A. Mazzoni⁵⁷, A.F. Mechler⁶⁸, F. Meddi²³, Y. Melikyan^{62,91}, A. Menchaca-Rocha⁷¹, C. Mengke⁶, E. Meninno³⁰, M. Meres¹⁴, S. Mhlanga¹²⁴, Y. Miake¹³³, L. Micheletti²⁶, M.M. Mieskolainen⁴³, D.L. Mihaylov¹⁰³, K. Mikhaylov^{74,90}, A. Mischke^{63,i}, A.N. Mishra⁶⁹, D. Miśkowiec¹⁰⁵, C.M. Miti⁶⁷, A. Modak³, N. Mohammadi³⁴, A.P. Mohanty⁶³, B. Mohanty⁸⁴, M. Mohisin Khan^{17,iv}, M. Mondal¹⁴¹, C. Mordasini¹⁰³, D.A. Moreira De Godoy¹⁴⁴, L.A.P. Moreno⁴⁴, S. Moretto²⁹, A. Morreale¹¹⁴, A. Morsch³⁴, T. Mrnjavac³⁴, V. Muccifora⁵¹, E. Mudnic³⁵, D. Mühlheim¹⁴⁴, S. Muhuri¹⁴¹, J.D. Mulligan⁷⁸, M.G. Munhoz¹²¹, K. Munning⁴², R.H. Munzer⁶⁸, H. Murakami¹³², S. Murray¹²⁴, L. Musa³⁴, J. Musinsky⁶⁴, C.J. Myers¹²⁵, J.W. Myrcha¹⁴², B. Naik⁴⁸, R. Nair⁸³, B.K. Nandi⁴⁸, R. Nania^{10,53}, E. Nappi⁵², M.U. Naru¹⁵, A.F. Nassirpour⁷⁹, H. Natal da Luz¹²¹, C. Nattress¹³⁰, R. Nayak⁴⁸, T.K. Nayak^{84,141}, S. Nazarenko¹⁰⁷, A. Neagu²¹, R.A. Negrao De Oliveira⁶⁸, L. Nellen⁶⁹, S.V. Nesbo³⁶, G. Neskovic³⁹, D. Nesterov¹¹², B.S. Nielsen⁸⁷, S. Nikolaev⁸⁶, S. Nikulin⁸⁶, V. Nikulin⁹⁶, F. Noferini^{10,53}, P. Nomokonov⁷⁴, G. Nooren⁶³, J. Norman⁷⁷, N. Novitzky¹³³, P. Nowakowski¹⁴², A. Nyman⁸⁶, J. Nystrand²², M. Ogino⁸⁰, A. Ohlson¹⁰², J. Olińczak¹⁴², A.C. Oliveira Da Silva¹²¹, M.H. Oliver¹⁴⁶, C. Oppedisano⁵⁸, R. Orava⁴³, A. Ortiz Velasquez⁶⁹, A. Oskarsson⁷⁹, J. Otwinowski¹¹⁸, K. Oyama⁸⁰, Y. Pachmayer¹⁰², V. Pacik⁸⁷, D. Pagano¹⁴⁰, G. Paic⁶⁹, P. Palni⁶, J. Pan¹⁴³, A.K. Pandey⁴⁸, S. Panebianco¹³⁷, P. Pareek⁴⁹, J. Park⁶⁰, J.E. Parkkila¹²⁶, S. Parmar⁹⁸, S.P. Pathak¹²⁵, R.N. Patra¹⁴¹, B. Paul^{24,58}, H. Pei⁶, T. Peitzmann⁶³, X. Peng⁶, L.G. Pereira⁷⁰, H. Pereira Da Costa¹³⁷, D. Peresunko⁸⁶, G.M. Perez⁸, E. Perez Lezama⁶⁸, V. Peskov⁶⁸, Y. Pestov⁴, V. Petráček³⁷, M. Petrovici⁴⁷, R.P. Pezzi⁷⁰, S. Piano⁵⁹, M. Pikna¹⁴, P. Pillot¹¹⁴, L.O.D.L. Pimentel⁸⁷, O. Pinazza^{34,53}, L. Pinsky¹²⁵, C. Pinto²⁸, S. Pisano⁵¹, D. Pistone⁵⁵, D.B. Piyarathna¹²⁵, M. Płoskoń⁷⁸, M. Planinic⁹⁷, F. Pliquett⁶⁸, J. Pluta¹⁴², S. Pochybova¹⁴⁵, M.G. Poghosyan⁹⁴, B. Polichtchouk⁸⁹, N. Poljak⁹⁷, A. Pop⁴⁷, H. Poppenborg¹⁴⁴, S. Porteboeuf-Houssais¹³⁴, V. Pozdniakov⁷⁴, S.K. Prasad³, R. Preghenella⁵³, F. Prino⁵⁸, C.A. Pruneau¹⁴³, I. Pshenichnov⁶², M. Puccio^{26,34}, V. Punin¹⁰⁷, K. Puranapanda¹⁴¹, J. Putschke¹⁴³, R.E. Quishpe¹²⁵, S. Ragoni¹⁰⁹, S. Raha³, S. Rajput⁹⁹, J. Rak¹²⁶, A. Rakotozafindrabe¹³⁷, L. Ramello³², F. Rami¹³⁶, R. Raniwala¹⁰⁰, S. Raniwala¹⁰⁰, S.S. Räsänen⁴³, B.T. Rascanu⁶⁸, R. Rath⁴⁹, V. Ratza⁴², I. Ravasenga³¹, K.F. Read^{94,130}, K. Redlich^{83,v}, A. Rehman²², P. Reichelt⁶⁸, F. Reidt³⁴, X. Ren⁶, R. Renfordt⁶⁸, A. Reshetin⁶², J.-P. Revol¹⁰, K. Reygers¹⁰², V. Riabov⁹⁶, T. Richert^{79,87}, M. Richter²¹,

P. Riedler³⁴, W. Riegler³⁴, F. Riggi²⁸, C. Ristea⁶⁷, S.P. Rode⁴⁹, M. Rodríguez Cahuantzi⁴⁴, K. Røed²¹, R. Rogalev⁸⁹, E. Rogochaya⁷⁴, D. Rohr³⁴, D. Röhrich²², P.S. Rokita¹⁴², F. Ronchetti⁵¹, E.D. Rosas⁶⁹, K. Roslon¹⁴², P. Rosnet¹³⁴, A. Rossi^{29,56}, A. Rotondi¹³⁹, F. Roukoutakis⁸², A. Roy⁴⁹, P. Roy¹⁰⁸, O.V. Rueda⁷⁹, R. Rui²⁵, B. Rumyantsev⁷⁴, A. Rustamov⁸⁵, E. Ryabinkin⁸⁶, Y. Ryabov⁹⁶, A. Rybicki¹¹⁸, H. Ryttonen¹²⁶, S. Sadhu¹⁴¹, S. Sadosky⁸⁹, K. Šafařík^{34,37}, S.K. Saha¹⁴¹, B. Sahoo⁴⁸, P. Sahoo^{48,49}, R. Sahoo⁴⁹, S. Sahoo⁶⁵, P.K. Sahu⁶⁵, J. Saini¹⁴¹, S. Sakai¹³³, S. Sambyal⁹⁹, V. Samsonov^{91,96}, A. Sandoval⁷¹, A. Sarkar⁷², D. Sarkar¹⁴³, N. Sarkar¹⁴¹, P. Sarma⁴¹, V.M. Sarti¹⁰³, M.H.P. Sas⁶³, E. Scapparone⁵³, B. Schaefer⁹⁴, J. Schambach¹¹⁹, H.S. Scheid⁶⁸, C. Schiaua⁴⁷, R. Schicker¹⁰², A. Schmah¹⁰², C. Schmidt¹⁰⁵, H.R. Schmidt¹⁰¹, M.O. Schmidt¹⁰², M. Schmidt¹⁰¹, N.V. Schmidt^{68,94}, A.R. Schmier¹³⁰, J. Schukraft^{34,87}, Y. Schutz^{34,136}, K. Schwarz¹⁰⁵, K. Schweda¹⁰⁵, G. Scioli²⁷, E. Scomparin⁵⁸, M. Šeščík³⁸, J.E. Seger¹⁶, Y. Sekiguchi¹³², D. Sekihata^{45,132}, I. Selyuzhenkov^{91,105}, S. Senyukov¹³⁶, D. Serebryakov⁶², E. Serradilla⁷¹, P. Sett⁴⁸, A. Sevcenco⁶⁷, A. Shabanov⁶², A. Shabetai¹¹⁴, R. Shahoyan³⁴, W. Shaikh¹⁰⁸, A. Shangaraev⁸⁹, A. Sharma⁹⁸, A. Sharma⁹⁹, H. Sharma¹¹⁸, M. Sharma⁹⁹, N. Sharma⁹⁸, A.I. Sheikh¹⁴¹, K. Shigaki⁴⁵, M. Shimomura⁸¹, S. Shirinkin⁹⁰, Q. Shou¹¹¹, Y. Sibiriak⁸⁶, S. Siddhanta⁵⁴, T. Siemiarczuk⁸³, D. Silvermyr⁷⁹, C. Silvestre⁷⁷, G. Simatovic⁸⁸, G. Simonetti^{34,103}, R. Singh⁸⁴, R. Singh⁹⁹, V.K. Singh¹⁴¹, V. Singhal¹⁴¹, T. Sinha¹⁰⁸, B. Sitar¹⁴, M. Sitta³², T.B. Skaali²¹, M. Slupecki¹²⁶, N. Smirnov¹⁴⁶, R.J.M. Snellings⁶³, T.W. Snellman^{43,126}, J. Sochan¹¹⁶, C. Soncco¹¹⁰, J. Song^{60,125}, A. Songmoolnak¹¹⁵, F. Soramel²⁹, S. Sorensen¹³⁰, I. Sputowska¹¹⁸, J. Stachel¹⁰², I. Stan⁶⁷, P. Stankus⁹⁴, P.J. Steffanic¹³⁰, E. Stenlund⁷⁹, D. Stocco¹¹⁴, M.M. Storetvedt³⁶, P. Strmen¹⁴, A.A.P. Suaide¹²¹, T. Sugitate⁴⁵, C. Suire⁶¹, M. Suleymanov¹⁵, M. Suljic³⁴, R. Sultanov⁹⁰, M. Šumbera⁹³, S. Sumowidagdo⁵⁰, K. Suzuki¹¹³, S. Swain⁶⁵, A. Szabo¹⁴, I. Szarka¹⁴, U. Tabassam¹⁵, G. Taillepied¹³⁴, J. Takahashi¹²², G.J. Tambave²², S. Tang^{6,134}, M. Tarhini¹¹⁴, M.G. Tarzila⁴⁷, A. Tauro³⁴, G. Tejada Muñoz⁴⁴, A. Telesca³⁴, C. Terrevoli^{29,125}, D. Thakur⁴⁹, S. Thakur¹⁴¹, D. Thomas¹¹⁹, F. Thoresen⁸⁷, R. Tieulent¹³⁵, A. Tikhonov⁶², A.R. Timmins¹²⁵, A. Toia⁶⁸, N. Topilskaya⁶², M. Toppi⁵¹, F. Torres-Acosta²⁰, S.R. Torres¹²⁰, A. Trifiro⁵⁵, S. Tripathy⁴⁹, T. Tripathy⁴⁸, S. Trogolo²⁹, G. Trombetta³³, L. Tropp³⁸, V. Trubnikov², W.H. Trzaska¹²⁶, T.P. Trzcinski¹⁴², B.A. Trzeciak⁶³, T. Tsuji¹³², A. Tumkin¹⁰⁷, R. Turrisi⁵⁶, T.S. Tveter²¹, K. Ullaland²², E.N. Umaka¹²⁵, A. Uras¹³⁵, G.L. Usai²⁴, A. Utrobicic⁹⁷, M. Vala^{38,116}, N. Valle¹³⁹, S. Vallero⁵⁸, N. van der Kolk⁶³, L.V.R. van Doremalen⁶³, M. van Leeuwen⁶³, P. Vande Vyvre³⁴, D. Varga¹⁴⁵, Z. Varga¹⁴⁵, M. Varga-Kofarago¹⁴⁵, A. Vargas⁴⁴, M. Vargyas¹²⁶, R. Varma⁴⁸, M. Vasileiou⁸², A. Vasiliev⁸⁶, O. Vázquez Doce^{103,117}, V. Vechernin¹¹², A.M. Veen⁶³, E. Vercellin²⁶, S. Vergara Limón⁴⁴, L. Vermunt⁶³, R. Vernet⁷, R. Vértesi¹⁴⁵, M.G.D.L.C. Vicencio⁹, L. Vickovic³⁵, J. Viinikainen¹²⁶, Z. Vilakazi¹³¹, O. Villalobos Baillie¹⁰⁹, A. Villatoro Tello⁴⁴, G. Vino⁵², A. Vinogradov⁸⁶, T. Virgili³⁰, V. Vislavicius⁸⁷, A. Vodopyanov⁷⁴, B. Volkel³⁴, M.A. Völkl¹⁰¹, K. Voloshin⁹⁰, S.A. Voloshin¹⁴³, G. Volpe³³, B. von Haller³⁴, I. Vorobyev¹⁰³, D. Voscek¹¹⁶, J. Vrláková³⁸, B. Wagner²², M. Weber¹¹³, S.G. Weber^{105,144}, A. Wegrzynek³⁴, D.F. Weiser¹⁰², S.C. Wenzel³⁴, J.P. Wessels¹⁴⁴, E. Widmann¹¹³, J. Wiechula⁶⁸, J. Wikne²¹, G. Wilk⁸³, J. Wilkinson⁵³, G.A. Willems³⁴, E. Willsher¹⁰⁹, B. Windelband¹⁰², W.E. Witt¹³⁰, Y. Wu¹²⁸, R. Xu⁶, S. Yalcin⁷⁶, K. Yamakawa⁴⁵, S. Yang²², S. Yano¹³⁷, Z. Yin⁶, H. Yokoyama^{63,133}, I.-K. Yoo¹⁸, J.H. Yoon⁶⁰, S. Yuan²², A. Yuncu¹⁰², V. Yurchenko², V. Zaccolo^{25,58}, A. Zaman¹⁵, C. Zampolli³⁴, H.J.C. Zanoli^{63,121}, N. Zardoshti³⁴, A. Zarochentsev¹¹², P. Závada⁶⁶, N. Zaviyalov¹⁰⁷, H. Zbroszczyk¹⁴², M. Zhalov⁹⁶, X. Zhang⁶, Z. Zhang⁶, C. Zhao²¹, V. Zhrebchevskii¹¹², N. Zhigareva⁹⁰, D. Zhou⁶, Y. Zhou⁸⁷, Z. Zhou²², J. Zhu⁶, Y. Zhu⁶, A. Zichichi^{10,27}, M.B. Zimmermann³⁴, G. Zinovjev², N. Zurlo¹⁴⁰,

Affiliation notes

ⁱ Deceased

ⁱⁱ Dipartimento DET del Politecnico di Torino, Turin, Italy

ⁱⁱⁱ M.V. Lomonosov Moscow State University, D.V. Skobeltsyn Institute of Nuclear Physics, Moscow, Russia

^{iv} Department of Applied Physics, Aligarh Muslim University, Aligarh, India

^v Institute of Theoretical Physics, University of Wrocław, Poland

Collaboration Institutes

¹ A.I. Alikhanyan National Science Laboratory (Yerevan Physics Institute) Foundation, Yerevan, Armenia

² Bogolyubov Institute for Theoretical Physics, National Academy of Sciences of Ukraine, Kiev, Ukraine

³ Bose Institute, Department of Physics and Centre for Astroparticle Physics and Space Science (CAPSS), Kolkata, India

⁴ Budker Institute for Nuclear Physics, Novosibirsk, Russia

- 5 California Polytechnic State University, San Luis Obispo, California, United States
- 6 Central China Normal University, Wuhan, China
- 7 Centre de Calcul de l'IN2P3, Villeurbanne, Lyon, France
- 8 Centro de Aplicaciones Tecnológicas y Desarrollo Nuclear (CEADEN), Havana, Cuba
- 9 Centro de Investigación y de Estudios Avanzados (CINVESTAV), Mexico City and Mérida, Mexico
- 10 Centro Fermi - Museo Storico della Fisica e Centro Studi e Ricerche "Enrico Fermi", Rome, Italy
- 11 Chicago State University, Chicago, Illinois, United States
- 12 China Institute of Atomic Energy, Beijing, China
- 13 Chonbuk National University, Jeonju, Republic of Korea
- 14 Comenius University Bratislava, Faculty of Mathematics, Physics and Informatics, Bratislava, Slovakia
- 15 COMSATS University Islamabad, Islamabad, Pakistan
- 16 Creighton University, Omaha, Nebraska, United States
- 17 Department of Physics, Aligarh Muslim University, Aligarh, India
- 18 Department of Physics, Pusan National University, Pusan, Republic of Korea
- 19 Department of Physics, Sejong University, Seoul, Republic of Korea
- 20 Department of Physics, University of California, Berkeley, California, United States
- 21 Department of Physics, University of Oslo, Oslo, Norway
- 22 Department of Physics and Technology, University of Bergen, Bergen, Norway
- 23 Dipartimento di Fisica dell'Università 'La Sapienza' and Sezione INFN, Rome, Italy
- 24 Dipartimento di Fisica dell'Università and Sezione INFN, Cagliari, Italy
- 25 Dipartimento di Fisica dell'Università and Sezione INFN, Trieste, Italy
- 26 Dipartimento di Fisica dell'Università and Sezione INFN, Turin, Italy
- 27 Dipartimento di Fisica e Astronomia dell'Università and Sezione INFN, Bologna, Italy
- 28 Dipartimento di Fisica e Astronomia dell'Università and Sezione INFN, Catania, Italy
- 29 Dipartimento di Fisica e Astronomia dell'Università and Sezione INFN, Padova, Italy
- 30 Dipartimento di Fisica 'E.R. Caianiello' dell'Università and Gruppo Collegato INFN, Salerno, Italy
- 31 Dipartimento DISAT del Politecnico and Sezione INFN, Turin, Italy
- 32 Dipartimento di Scienze e Innovazione Tecnologica dell'Università del Piemonte Orientale and INFN Sezione di Torino, Alessandria, Italy
- 33 Dipartimento Interateneo di Fisica 'M. Merlin' and Sezione INFN, Bari, Italy
- 34 European Organization for Nuclear Research (CERN), Geneva, Switzerland
- 35 Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Split, Croatia
- 36 Faculty of Engineering and Science, Western Norway University of Applied Sciences, Bergen, Norway
- 37 Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Prague, Czech Republic
- 38 Faculty of Science, P.J. Šafárik University, Košice, Slovakia
- 39 Frankfurt Institute for Advanced Studies, Johann Wolfgang Goethe-Universität Frankfurt, Frankfurt, Germany
- 40 Gangneung-Wonju National University, Gangneung, Republic of Korea
- 41 Gauhati University, Department of Physics, Guwahati, India
- 42 Helmholtz-Institut für Strahlen- und Kernphysik, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, Germany
- 43 Helsinki Institute of Physics (HIP), Helsinki, Finland
- 44 High Energy Physics Group, Universidad Autónoma de Puebla, Puebla, Mexico
- 45 Hiroshima University, Hiroshima, Japan
- 46 Hochschule Worms, Zentrum für Technologietransfer und Telekommunikation (ZTT), Worms, Germany
- 47 Horia Hulubei National Institute of Physics and Nuclear Engineering, Bucharest, Romania
- 48 Indian Institute of Technology Bombay (IIT), Mumbai, India
- 49 Indian Institute of Technology Indore, Indore, India
- 50 Indonesian Institute of Sciences, Jakarta, Indonesia
- 51 INFN, Laboratori Nazionali di Frascati, Frascati, Italy
- 52 INFN, Sezione di Bari, Bari, Italy
- 53 INFN, Sezione di Bologna, Bologna, Italy
- 54 INFN, Sezione di Cagliari, Cagliari, Italy
- 55 INFN, Sezione di Catania, Catania, Italy

- 56 INFN, Sezione di Padova, Padova, Italy
- 57 INFN, Sezione di Roma, Rome, Italy
- 58 INFN, Sezione di Torino, Turin, Italy
- 59 INFN, Sezione di Trieste, Trieste, Italy
- 60 Inha University, Incheon, Republic of Korea
- 61 Institut de Physique Nucléaire d'Orsay (IPNO), Institut National de Physique Nucléaire et de Physique des Particules (IN2P3/CNRS), Université de Paris-Sud, Université Paris-Saclay, Orsay, France
- 62 Institute for Nuclear Research, Academy of Sciences, Moscow, Russia
- 63 Institute for Subatomic Physics, Utrecht University/Nikhef, Utrecht, Netherlands
- 64 Institute of Experimental Physics, Slovak Academy of Sciences, Košice, Slovakia
- 65 Institute of Physics, Homi Bhabha National Institute, Bhubaneswar, India
- 66 Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic
- 67 Institute of Space Science (ISS), Bucharest, Romania
- 68 Institut für Kernphysik, Johann Wolfgang Goethe-Universität Frankfurt, Frankfurt, Germany
- 69 Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México, Mexico City, Mexico
- 70 Instituto de Física, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil
- 71 Instituto de Física, Universidad Nacional Autónoma de México, Mexico City, Mexico
- 72 iThemba LABS, National Research Foundation, Somerset West, South Africa
- 73 Johann-Wolfgang-Goethe Universität Frankfurt Institut für Informatik, Fachbereich Informatik und Mathematik, Frankfurt, Germany
- 74 Joint Institute for Nuclear Research (JINR), Dubna, Russia
- 75 Korea Institute of Science and Technology Information, Daejeon, Republic of Korea
- 76 KTO Karatay University, Konya, Turkey
- 77 Laboratoire de Physique Subatomique et de Cosmologie, Université Grenoble-Alpes, CNRS-IN2P3, Grenoble, France
- 78 Lawrence Berkeley National Laboratory, Berkeley, California, United States
- 79 Lund University Department of Physics, Division of Particle Physics, Lund, Sweden
- 80 Nagasaki Institute of Applied Science, Nagasaki, Japan
- 81 Nara Women's University (NWU), Nara, Japan
- 82 National and Kapodistrian University of Athens, School of Science, Department of Physics, Athens, Greece
- 83 National Centre for Nuclear Research, Warsaw, Poland
- 84 National Institute of Science Education and Research, Homi Bhabha National Institute, Jatni, India
- 85 National Nuclear Research Center, Baku, Azerbaijan
- 86 National Research Centre Kurchatov Institute, Moscow, Russia
- 87 Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark
- 88 Nikhef, National institute for subatomic physics, Amsterdam, Netherlands
- 89 NRC Kurchatov Institute IHEP, Protvino, Russia
- 90 NRC «Kurchatov Institute» - ITEP, Moscow, Russia
- 91 NRNU Moscow Engineering Physics Institute, Moscow, Russia
- 92 Nuclear Physics Group, STFC Daresbury Laboratory, Daresbury, United Kingdom
- 93 Nuclear Physics Institute of the Czech Academy of Sciences, Řež u Prahy, Czech Republic
- 94 Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States
- 95 Ohio State University, Columbus, Ohio, United States
- 96 Petersburg Nuclear Physics Institute, Gatchina, Russia
- 97 Physics department, Faculty of science, University of Zagreb, Zagreb, Croatia
- 98 Physics Department, Panjab University, Chandigarh, India
- 99 Physics Department, University of Jammu, Jammu, India
- 100 Physics Department, University of Rajasthan, Jaipur, India
- 101 Physikalisches Institut, Eberhard-Karls-Universität Tübingen, Tübingen, Germany
- 102 Physikalisches Institut, Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany
- 103 Physik Department, Technische Universität München, Munich, Germany
- 104 Politecnico di Bari, Bari, Italy
- 105 Research Division and ExtreMe Matter Institute EMMI, GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany
- 106 Rudjer Bošković Institute, Zagreb, Croatia

- 107 Russian Federal Nuclear Center (VNIIEF), Sarov, Russia
- 108 Saha Institute of Nuclear Physics, Homi Bhabha National Institute, Kolkata, India
- 109 School of Physics and Astronomy, University of Birmingham, Birmingham, United Kingdom
- 110 Sección Física, Departamento de Ciencias, Pontificia Universidad Católica del Perú, Lima, Peru
- 111 Shanghai Institute of Applied Physics, Shanghai, China
- 112 St. Petersburg State University, St. Petersburg, Russia
- 113 Stefan Meyer Institut für Subatomare Physik (SMI), Vienna, Austria
- 114 SUBATECH, IMT Atlantique, Université de Nantes, CNRS-IN2P3, Nantes, France
- 115 Suranaree University of Technology, Nakhon Ratchasima, Thailand
- 116 Technical University of Košice, Košice, Slovakia
- 117 Technische Universität München, Excellence Cluster 'Universe', Munich, Germany
- 118 The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences, Cracow, Poland
- 119 The University of Texas at Austin, Austin, Texas, United States
- 120 Universidad Autónoma de Sinaloa, Culiacán, Mexico
- 121 Universidade de São Paulo (USP), São Paulo, Brazil
- 122 Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil
- 123 Universidade Federal do ABC, Santo Andre, Brazil
- 124 University of Cape Town, Cape Town, South Africa
- 125 University of Houston, Houston, Texas, United States
- 126 University of Jyväskylä, Jyväskylä, Finland
- 127 University of Liverpool, Liverpool, United Kingdom
- 128 University of Science and Technology of China, Hefei, China
- 129 University of South-Eastern Norway, Tonsberg, Norway
- 130 University of Tennessee, Knoxville, Tennessee, United States
- 131 University of the Witwatersrand, Johannesburg, South Africa
- 132 University of Tokyo, Tokyo, Japan
- 133 University of Tsukuba, Tsukuba, Japan
- 134 Université Clermont Auvergne, CNRS/IN2P3, LPC, Clermont-Ferrand, France
- 135 Université de Lyon, Université Lyon 1, CNRS/IN2P3, IPN-Lyon, Villeurbanne, Lyon, France
- 136 Université de Strasbourg, CNRS, IPHC UMR 7178, F-67000 Strasbourg, France, Strasbourg, France
- 137 Université Paris-Saclay Centre d'Etudes de Saclay (CEA), IRFU, Département de Physique Nucléaire (DPhN), Saclay, France
- 138 Università degli Studi di Foggia, Foggia, Italy
- 139 Università degli Studi di Pavia, Pavia, Italy
- 140 Università di Brescia, Brescia, Italy
- 141 Variable Energy Cyclotron Centre, Homi Bhabha National Institute, Kolkata, India
- 142 Warsaw University of Technology, Warsaw, Poland
- 143 Wayne State University, Detroit, Michigan, United States
- 144 Westfälische Wilhelms-Universität Münster, Institut für Kernphysik, Münster, Germany
- 145 Wigner Research Centre for Physics, Hungarian Academy of Sciences, Budapest, Hungary
- 146 Yale University, New Haven, Connecticut, United States
- 147 Yonsei University, Seoul, Republic of Korea