Corrigendum to “Suppression of Y production in d + Au and Au + Au collisions at √sN N = 200 GeV” [Phys. Lett. B 735 (2014) 127–137]

(STAR Collaboration) Adamczyk, L.; ...; Planinić, Mirko; ...; Poljak, Nikola; ...; Zyzak, M.

Source / Izvornik: **Physics Letters B, 2015, 743, 537 - 541**

Journal article, Published version
Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

https://doi.org/10.1016/j.physletb.2015.01.046

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:217:724551

Physics Letters B 743 (2015) 537–541

Contents lists available at ScienceDirect

Physics Letters B

www.elsevier.com/locate/physletb

Corrigendum

Corrigendum to "Suppression of Υ production in $d+\mathrm{Au}$ and $\mathrm{Au}+\mathrm{Au}$ collisions at $\sqrt{s_{NN}} = 200$ GeV" [Phys. Lett. B 735 (2014) 127–137]

STAR Collaboration

L. Adamczyk [a], J.K. Adkins [w], G. Agakishiev [u], M.M. Aggarwal [ai], Z. Ahammed [bb], I. Alekseev [s], J. Alford [v], C.D. Anson [af], A. Aparin [u], D. Arkhipkin [d], E.C. Aschenauer [d], G.S. Averichev [u], J. Balewski [aa], A. Banerjee [bb], Z. Barnovska [n], D.R. Beavis [d], R. Bellwied [ax], A. Bhasin [t], A.K. Bhati [ai], P. Bhattarai [aw], H. Bichsel [bd], J. Bielcik [m], J. Bielcikova [n], L.C. Bland [d], I.G. Bordyuzhin [s], W. Borowski [at], J. Bouchet [v], A.V. Brandin [ad], S.G. Brovko [f], S. Bültmann [ag], I. Bunzarov [u], T.P. Burton [d], J. Butterworth [ao], H. Caines [be], M. Calderón de la Barca Sánchez [f,*], D. Cebra [f], R. Cendejas [aj], M.C. Cervantes [av], P. Chaloupka [m], Z. Chang [av], S. Chattopadhyay [bb], H.F. Chen [aq], J.H. Chen [as], L. Chen [i], J. Cheng [ay], M. Cherney [l], A. Chikanian [be], W. Christie [d], J. Chwastowski [k], M.J.M. Codrington [aw], R. Corliss [aa], J.G. Cramer [bd], H.J. Crawford [e], X. Cui [aq], S. Das [p], A. Davila Leyva [aw], L.C. De Silva [ax], R.R. Debbe [d], T.G. Dedovich [u], J. Deng [ar], A.A. Derevschikov [ak], R. Derradi de Souza [h], S. Dhamija [r], B. di Ruzza [d], L. Didenko [d], C. Dilks [aj], F. Ding [f], P. Djawotho [av], X. Dong [z], J.L. Drachenberg [ba], J.E. Draper [f], C.M. Du [y], L.E. Dunkelberger [g], J.C. Dunlop [d], L.G. Efimov [u], J. Engelage [e], K.S. Engle [az], G. Eppley [ao], L. Eun [z], O. Evdokimov [j], R. Fatemi [w], S. Fazio [d], J. Fedorisin [u], P. Filip [u], E. Finch [be], Y. Fisyak [d], C.E. Flores [f], C.A. Gagliardi [av], D.R. Gangadharan [af], D. Garand [al], F. Geurts [ao], A. Gibson [ba], M. Girard [bc], S. Gliske [b], D. Grosnick [ba], Y. Guo [aq], A. Gupta [t], S. Gupta [t], W. Guryn [d], B. Haag [f], O. Hajkova [m], A. Hamed [av], L.-X. Han [as], R. Haque [ae], J.W. Harris [be], J.P. Hays-Wehle [aa], S. Heppelmann [aj], K. Hill [f], A. Hirsch [al], G.W. Hoffmann [aw], D.J. Hofman [j], S. Horvat [be], B. Huang [d], H.Z. Huang [g], P. Huck [i], T.J. Humanic [af], G. Igo [g], W.W. Jacobs [r], H. Jang [x], E.G. Judd [e], S. Kabana [at], D. Kalinkin [s], K. Kang [ay], K. Kauder [j], H.W. Ke [d], D. Keane [v], A. Kechechyan [u], A. Kesich [f], Z.H. Khan [j], D.P. Kikola [al], I. Kisel [o], A. Kisiel [bc], D.D. Koetke [ba], T. Kollegger [o], J. Konzer [al], I. Koralt [ag], W. Korsch [w], L. Kotchenda [ad], P. Kravtsov [ad], K. Krueger [b], I. Kulakov [o], L. Kumar [ae], R.A. Kycia [k], M.A.C. Lamont [d], J.M. Landgraf [d], K.D. Landry [g], J. Lauret [d], A. Lebedev [d], R. Lednicky [u], J.H. Lee [d], W. Leight [aa], M.J. LeVine [d], C. Li [aq], W. Li [as], X. Li [al], X. Li [au], Y. Li [ay], Z.M. Li [i], L.M. Lima [ap], M.A. Lisa [af], F. Liu [i], T. Ljubicic [d], W.J. Llope [ao], R.S. Longacre [d], X. Luo [i], G.L. Ma [as], Y.G. Ma [as], D.M.M.D. Madagodagettige Don [l], D.P. Mahapatra [p], R. Majka [be], S. Margetis [v], C. Markert [aw], H. Masui [z], H.S. Matis [z], D. McDonald [ao], T.S. McShane [l], N.G. Minaev [ak], S. Mioduszewski [av], B. Mohanty [ae], M.M. Mondal [av], D.A. Morozov [ak], M.G. Munhoz [ap], M.K. Mustafa [z], B.K. Nandi [q], Md. Nasim [ae], T.K. Nayak [bb], J.M. Nelson [c], L.V. Nogach [ak], S.Y. Noh [x], J. Novak [ac], S.B. Nurushev [ak], G. Odyniec [z], A. Ogawa [d], K. Oh [am], A. Ohlson [be],

DOI of original article: http://dx.doi.org/10.1016/j.physletb.2014.06.028.

* Corresponding author.
E-mail address: calderon@physics.ucdavis.edu (M. Calderón de la Barca Sánchez).

http://dx.doi.org/10.1016/j.physletb.2015.01.046

V. Okorokov [ad], E.W. Oldag [aw], R.A.N. Oliveira [ap], M. Pachr [m], B.S. Page [r], S.K. Pal [bb], Y.X. Pan [g], Y. Pandit [j], Y. Panebratsev [u], T. Pawlak [bc], B. Pawlik [ah], H. Pei [i], C. Perkins [e], W. Peryt [bc], A. Peterson [f], P. Pile [d], M. Planinic [bf], J. Pluta [bc], D. Plyku [ag], N. Poljak [bf], J. Porter [z], A.M. Poskanzer [z], N.K. Pruthi [ai], M. Przybycien [a], P.R. Pujahari [q], H. Qiu [z], A. Quintero [v], S. Ramachandran [w], R. Raniwala [an], S. Raniwala [an], R.L. Ray [aw], C.K. Riley [be], H.G. Ritter [z], J.B. Roberts [ao], O.V. Rogachevskiy [u], J.L. Romero [f], J.F. Ross [l], A. Roy [bb], L. Ruan [d], J. Rusnak [n], N.R. Sahoo [bb], P.K. Sahu [p], I. Sakrejda [z], S. Salur [z], A. Sandacz [bc], J. Sandweiss [be], E. Sangaline [f], A. Sarkar [q], J. Schambach [aw], R.P. Scharenberg [al], A.M. Schmah [z], W.B. Schmidke [d], N. Schmitz [ab], J. Seger [l], P. Seyboth [ab], N. Shah [g], E. Shahaliev [u], P.V. Shanmuganathan [v], M. Shao [aq], B. Sharma [ai], W.Q. Shen [as], S.S. Shi [z], Q.Y. Shou [as], E.P. Sichtermann [z], R.N. Singaraju [bb], M.J. Skoby [r], D. Smirnov [d], N. Smirnov [be], D. Solanki [an], P. Sorensen [d], U.G. deSouza [ap], H.M. Spinka [b], B. Srivastava [al], T.D.S. Stanislaus [ba], J.R. Stevens [aa], R. Stock [o], M. Strikhanov [ad], B. Stringfellow [al], A.A.P. Suaide [ap], M. Sumbera [n], X. Sun [z], X.M. Sun [z], Y. Sun [aq], Z. Sun [y], B. Surrow [au], D.N. Svirida [s], T.J.M. Symons [z], A. Szanto de Toledo [ap], J. Takahashi [h], A.H. Tang [d], Z. Tang [aq], T. Tarnowsky [ac], J.H. Thomas [z], A.R. Timmins [ax], D. Tlusty [n], M. Tokarev [u], S. Trentalange [g], R.E. Tribble [av], P. Tribedy [bb], B.A. Trzeciak [bc], O.D. Tsai [g], J. Turnau [ah], T. Ullrich [d], D.G. Underwood [b], G. Van Buren [d], G. van Nieuwenhuizen [aa], J.A. Vanfossen Jr. [v], R. Varma [q], G.M.S. Vasconcelos [h], A.N. Vasiliev [ak], R. Vertesi [n], F. Videbæk [d], Y.P. Viyogi [bb], S. Vokal [u], A. Vossen [r], M. Wada [aw], M. Walker [aa], F. Wang [al], G. Wang [g], H. Wang [d], J.S. Wang [y], X.L. Wang [aq], Y. Wang [ay], Y. Wang [j], G. Webb [w], J.C. Webb [d], G.D. Westfall [ac], H. Wieman [z], G. Wimsatt [f], S.W. Wissink [r], R. Witt [az], Y.F. Wu [i], Z. Xiao [ay], W. Xie [al], K. Xin [ao], H. Xu [y], N. Xu [z], Q.H. Xu [ar], Y. Xu [aq], Z. Xu [d], W. Yan [ay], C. Yang [aq], Y. Yang [y], Y. Yang [i], Z. Ye [j], P. Yepes [ao], L. Yi [al], K. Yip [d], I.-K. Yoo [am], Y. Zawisza [aq], H. Zbroszczyk [bc], W. Zha [aq], J.B. Zhang [i], J.L. Zhang [ar], S. Zhang [as], X.P. Zhang [ay], Y. Zhang [aq], Z.P. Zhang [aq], F. Zhao [g], J. Zhao [as], C. Zhong [as], X. Zhu [ay], Y.H. Zhu [as], Y. Zoulkarneeva [u], M. Zyzak [o]

[a] *AGH University of Science and Technology, Cracow, Poland*
[b] *Argonne National Laboratory, Argonne, IL 60439, USA*
[c] *University of Birmingham, Birmingham, United Kingdom*
[d] *Brookhaven National Laboratory, Upton, NY 11973, USA*
[e] *University of California, Berkeley, CA 94720, USA*
[f] *University of California, Davis, CA 95616, USA*
[g] *University of California, Los Angeles, CA 90095, USA*
[h] *Universidade Estadual de Campinas, Sao Paulo, Brazil*
[i] *Central China Normal University (HZNU), Wuhan 430079, China*
[j] *University of Illinois at Chicago, Chicago, IL 60607, USA*
[k] *Cracow University of Technology, Cracow, Poland*
[l] *Creighton University, Omaha, NE 68178, USA*
[m] *Czech Technical University in Prague, FNSPE, Prague, 115 19, Czech Republic*
[n] *Nuclear Physics Institute AS CR, 250 68 Řež/Prague, Czech Republic*
[o] *Frankfurt Institute for Advanced Studies FIAS, Germany*
[p] *Institute of Physics, Bhubaneswar 751005, India*
[q] *Indian Institute of Technology, Mumbai, India*
[r] *Indiana University, Bloomington, IN 47408, USA*
[s] *Alikhanov Institute for Theoretical and Experimental Physics, Moscow, Russia*
[t] *University of Jammu, Jammu 180001, India*
[u] *Joint Institute for Nuclear Research, Dubna, 141 980, Russia*
[v] *Kent State University, Kent, OH 44242, USA*
[w] *University of Kentucky, Lexington, KY, 40506-0055, USA*
[x] *Korea Institute of Science and Technology Information, Daejeon, Republic of Korea*
[y] *Institute of Modern Physics, Lanzhou, China*
[z] *Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA*
[aa] *Massachusetts Institute of Technology, Cambridge, MA 02139-4307, USA*
[ab] *Max-Planck-Institut für Physik, Munich, Germany*
[ac] *Michigan State University, East Lansing, MI 48824, USA*
[ad] *Moscow Engineering Physics Institute, Moscow Russia*
[ae] *National Institute of Science Education and Research, Bhubaneswar 751005, India*
[af] *Ohio State University, Columbus, OH 43210, USA*
[ag] *Old Dominion University, Norfolk, VA, 23529, USA*
[ah] *Institute of Nuclear Physics PAN, Cracow, Poland*
[ai] *Panjab University, Chandigarh 160014, India*
[aj] *Pennsylvania State University, University Park, PA 16802, USA*
[ak] *Institute of High Energy Physics, Protvino, Russia*
[al] *Purdue University, West Lafayette, IN 47907, USA*
[am] *Pusan National University, Pusan, Republic of Korea*

[an] University of Rajasthan, Jaipur 302004, India
[ao] Rice University, Houston, TX 77251, USA
[ap] Universidade de Sao Paulo, Sao Paulo, Brazil
[aq] University of Science & Technology of China, Hefei 230026, China
[ar] Shandong University, Jinan, Shandong 250100, China
[as] Shanghai Institute of Applied Physics, Shanghai 201800, China
[at] SUBATECH, Nantes, France
[au] Temple University, Philadelphia, PA 19122, USA
[av] Texas A&M University, College Station, TX 77843, USA
[aw] University of Texas, Austin, TX 78712, USA
[ax] University of Houston, Houston, TX 77204, USA
[ay] Tsinghua University, Beijing 100084, China
[az] United States Naval Academy, Annapolis, MD 21402, USA
[ba] Valparaiso University, Valparaiso, IN 46383, USA
[bb] Variable Energy Cyclotron Centre, Kolkata 700064, India
[bc] Warsaw University of Technology, Warsaw, Poland
[bd] University of Washington, Seattle, WA 98195, USA
[be] Yale University, New Haven, CT 06520, USA
[bf] University of Zagreb, Zagreb, HR-10002, Croatia

ARTICLE INFO

Article history:
Received 21 January 2015
Accepted 27 January 2015
Available online 11 March 2015
Editor: V. Metag

In the original Letter [1] we reported on measurements of Υ production in $d+\mathrm{Au}$ and $\mathrm{Au}+\mathrm{Au}$ collisions at $\sqrt{s_{NN}} = 200$ GeV using the STAR detector at RHIC.

We have uncovered a mistake in the original errors reported, affecting some of the statistical uncertainties of the $d+\mathrm{Au}$ nuclear modification factors, R_{dA}. The corrected values are listed in Table 3,

Table 3
Table of $R_{d\mathrm{Au}}$ and R_{AA} results. The results are listed in the form $a \pm b \pm c \pm d \pm e$ where a is $R_{d\mathrm{Au}}$ or R_{AA}, b is the $d+\mathrm{Au}$ or $\mathrm{Au}+\mathrm{Au}$ statistical uncertainty, c is the $p+p$ statistical uncertainty, d is the $d+\mathrm{Au}$ or $\mathrm{Au}+\mathrm{Au}$ systematic uncertainty, and e is the $p+p$ systematic uncertainty.

System	Centrality	States	Rapidity	$R_{AA,dA}$
$d+\mathrm{Au}$	Min. bias	1S + 2S + 3S	$-1.0 < y_\Upsilon < -0.5$	$0.84 \pm 0.40 \pm 0.18 \pm 0.03 \pm 0.10$
			$\lvert y_\Upsilon \rvert < 0.5$	$0.48 \pm 0.14 \pm 0.07 \pm 0.02 \pm 0.06$
			$0.5 < y_\Upsilon < 1.0$	$1.42 \pm 0.32 \pm 0.30 \pm 0.05 \pm 0.17$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.79 \pm 0.14 \pm 0.10 \pm 0.03 \pm 0.09$
		1S	$-1.0 < y_\Upsilon < -0.5$	$0.74 \pm 0.34 \pm 0.16^{+0.03}_{-0.06} \pm 0.09$
			$\lvert y_\Upsilon \rvert < 0.5$	$0.63 \pm 0.18 \pm 0.09^{+0.02}_{-0.05} \pm 0.08$
			$0.5 < y_\Upsilon < 1.0$	$1.31 \pm 0.29 \pm 0.28^{+0.05}_{-0.11} \pm 0.16$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.83 \pm 0.15 \pm 0.11^{+0.03}_{-0.07} \pm 0.10$
$\mathrm{Au}+\mathrm{Au}$	0–10%	1S + 2S + 3S	$\lvert y_\Upsilon \rvert < 0.5$	$0.46 \pm 0.05 \pm 0.07 \pm 0.02 \pm 0.05$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.49 \pm 0.13 \pm 0.07 \pm 0.02 \pm 0.06$
		1S	$\lvert y_\Upsilon \rvert < 0.5$	$0.69 \pm 0.05 \pm 0.10^{+0.02}_{-0.06} \pm 0.08$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.66 \pm 0.13 \pm 0.10^{+0.02}_{-0.05} \pm 0.08$
	10–30%	1S + 2S + 3S	$\lvert y_\Upsilon \rvert < 0.5$	$0.69 \pm 0.16 \pm 0.10 \pm 0.02 \pm 0.08$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.82 \pm 0.20 \pm 0.12 \pm 0.03 \pm 0.10$
		1S	$\lvert y_\Upsilon \rvert < 0.5$	$0.85 \pm 0.16 \pm 0.13^{+0.03}_{-0.07} \pm 0.10$
			$\lvert y_\Upsilon \rvert < 1.0$	$1.07 \pm 0.20 \pm 0.16^{+0.03}_{-0.09} \pm 0.13$
	30–60%	1S + 2S + 3S	$\lvert y_\Upsilon \rvert < 0.5$	$0.74 \pm 0.22 \pm 0.11 \pm 0.03 \pm 0.09$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.82 \pm 0.22 \pm 0.12 \pm 0.03 \pm 0.10$
		1S	$\lvert y_\Upsilon \rvert < 0.5$	$1.22 \pm 0.22 \pm 0.18^{+0.04}_{-0.10} \pm 0.15$
			$\lvert y_\Upsilon \rvert < 1.0$	$1.19 \pm 0.22 \pm 0.18^{+0.04}_{-0.10} \pm 0.14$
	0–60%	1S + 2S + 3S	$\lvert y_\Upsilon \rvert < 0.5$	$0.62 \pm 0.11 \pm 0.09 \pm 0.02 \pm 0.07$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.66 \pm 0.09 \pm 0.10 \pm 0.02 \pm 0.08$
		1S	$\lvert y_\Upsilon \rvert < 0.5$	$0.85 \pm 0.11 \pm 0.13^{+0.03}_{-0.07} \pm 0.10$
			$\lvert y_\Upsilon \rvert < 1.0$	$0.88 \pm 0.09 \pm 0.13^{+0.03}_{-0.07} \pm 0.11$

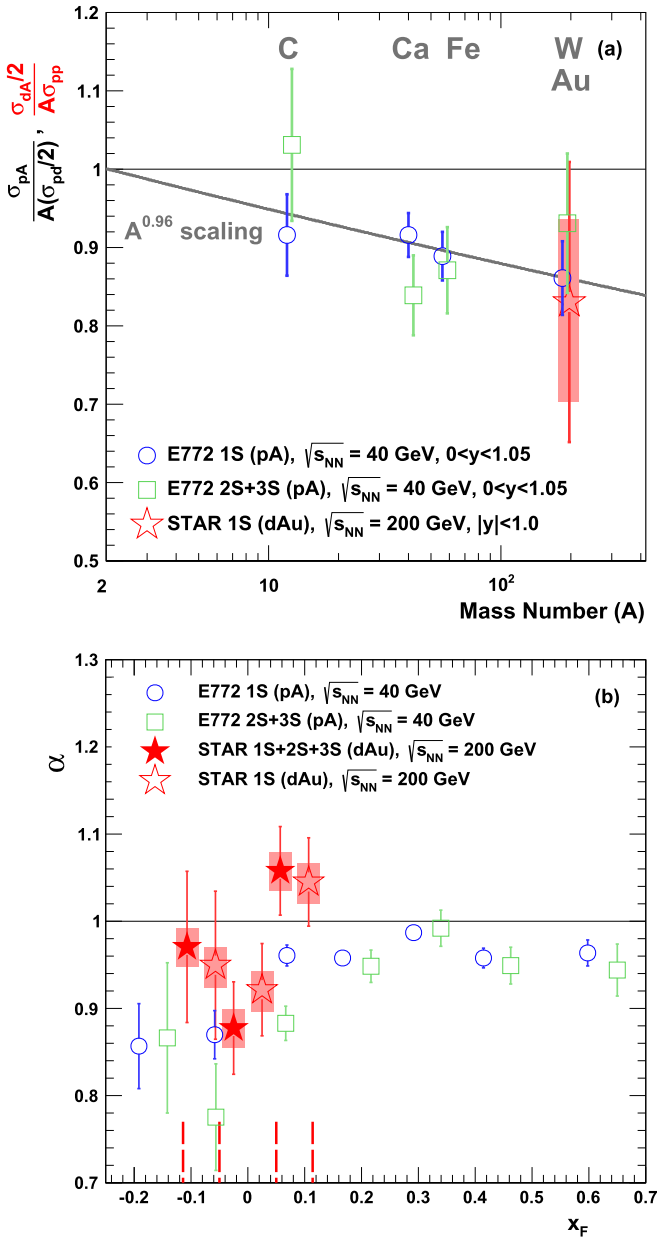

Fig. 3. (Color online.) Comparison of our $d+$Au measurements to the pA measurements from E772. (a): Ratio of Υ production in pA to pp scaled by mass number as a function of mass number. Shown are the 1S (hollow blue circles) and 2S + 3S (hollow green squares) Υ measurements from E772 and our 1S measurement (red star). Also shown is the model used by E772 where $\sigma_{pA} = A^{\alpha}\sigma_{pp}$. E772 found $\alpha = 0.962 \pm 0.006$ [2]. (b): Exponent α as a function of x_F. The vertical, dashed red lines at the bottom of the plot denote the width of the x_F bins for the STAR measurements. Note that the STAR data points are offset within the bins for clarity.

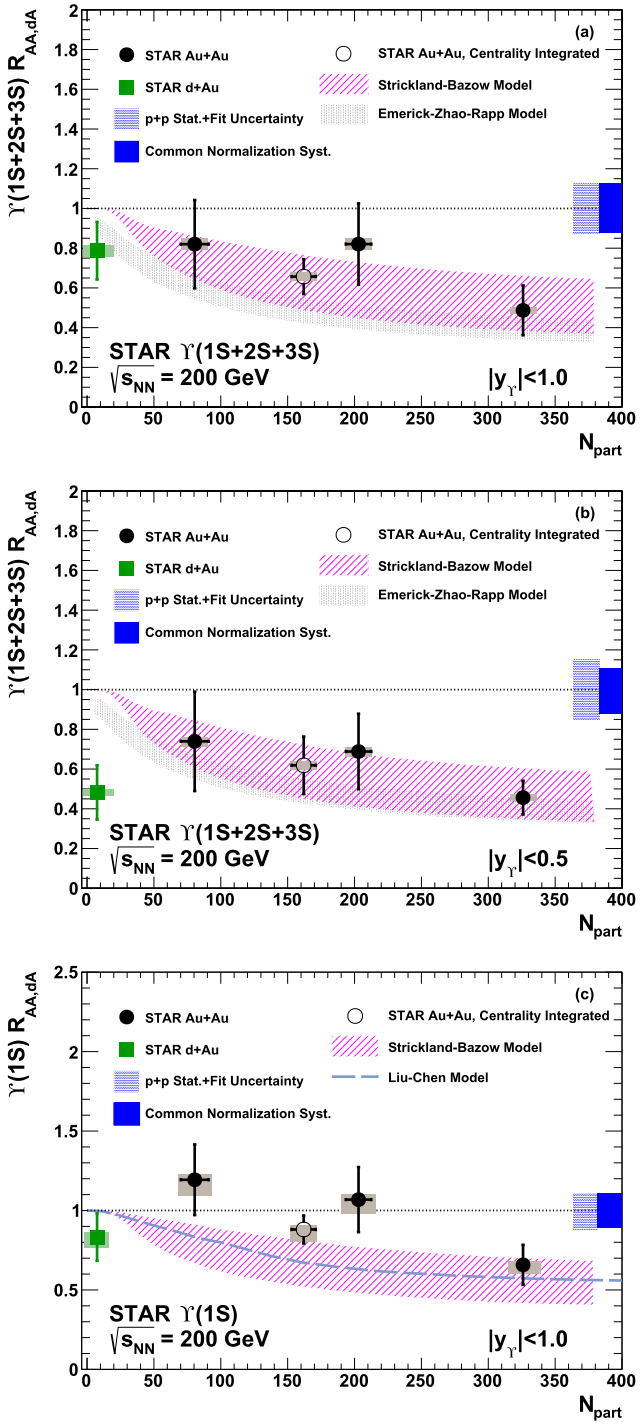

Fig. 5. (Color online.) Nuclear modification factor for Υ(1S+2S+3S), in $|y| < 1.0$ (a) and in $|y| < 0.5$ (b), and Υ(1S) in $|y| < 1.0$ (c), in $d+$Au (green square) and Au+Au (black circles) collisions as a function of N_{part}. The boxes around unity show the statistical (shaded) and systematic (filled) uncertainty from the $p+p$ measurement. The gray bands around the data points are the systematic uncertainties. The data are compared to calculations from Refs. [3–5].

which replaces the referring table in the original publication. In all cases the corrected statistical errors are smaller than the ones quoted in the original Letter. Due to these changes, panel (b) in Fig. 3, as well as panels (a) and (c) in Fig. 5 had to be updated; the complete figures are reprinted here. The errors on the nuclear modification factor in Au + Au collisions, R_{AA}, were not affected. All conclusions of the original Letter remain valid.

Three of the incorrect R_{dA} errors were quoted in the text:

- On page 133, left column, line 24, it should read: "For $d+$Au collisions, we find $R_{d\mathrm{Au}}(1S+2S+3S) = 0.79 \pm 0.14(d+\mathrm{Au}$ stat.$) \pm 0.10(p+p$ stat.$) \pm 0.03(d+\mathrm{Au}$ syst.$) \pm 0.09(p+p$ syst.$)$ in the range $|y| < 1$."
- On page 133, right column, line 7 it should read: "For $d+$Au collisions we find $R_{d\mathrm{Au}}(1S) = 0.83 \pm 0.15(d+\mathrm{Au}$ stat.$) \pm 0.11(p+p$ stat.$)^{+0.03}_{-0.07}(d+\mathrm{Au}$ syst.$) \pm 0.10(p+p$ syst.$)$ in the range $|y| < 1.0$."

- On page 136, left column, line 3, the correct sentence is: "We obtain a nuclear modification factor in this rapidity region ($|y| < 1$) of $R_{d\mathrm{Au}}(1S + 2S + 3S) = 0.79 \pm 0.14(d + \mathrm{Au\ stat.}) \pm 0.10(p + p\ \mathrm{stat.}) \pm 0.03(d + \mathrm{Au\ syst.}) \pm 0.09(p + p\ \mathrm{syst.})$."

The authors wish to thank Philippe Rosnet from the Université Blaise Pascal for his contribution in identifying this mistake.

References

[1] L. Adamczyk, et al., STAR Collaboration, Phys. Lett. B 735 (2014) 127, arXiv:1312.3675 [nucl-ex].
[2] D.M. Alde, H.W. Baer, T.A. Carey, G.T. Garvey, A. Klein, C. Lee, M.J. Leitch, J.W. Lillberg, et al., Phys. Rev. Lett. 66 (1991) 2285.
[3] M. Strickland, D. Bazow, Nucl. Phys. A 879 (2012) 25, arXiv:1112.2761 [nucl-th].
[4] A. Emerick, X. Zhao, R. Rapp, Eur. Phys. J. A 48 (2012) 72, arXiv:1111.6537 [hep-ph].
[5] Y. Liu, B. Chen, N. Xu, P. Zhuang, Phys. Lett. B 697 (2011) 32, arXiv:1009.2585 [nucl-th].