Erratum: Measurement of Inclusive Differential Cross Sections for $\Upsilon(1S)$ Production in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV [Phys. Rev. Lett. 94, 232001 (2005)]

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Jesik, K. Johns, M. Johnson, A. Jonckheere, P. Jonsson, A. Juste, D. Käfer, W. Kahl, S. Kahn, E. Kajfasz, A. M. Kalinin, J. Kalk, D. Karmanov, J. Kasper, D. Kau, R. Kaur, R. Kehoe, S. Kermiche, S. Kesisoglou, A. Khanov, A. Kharchilava, Y. M. Kharzheev, H. Kim, B. Klima, M. Klute, J. M. Kohli, M. Kopal, V. M. Korablev, J. Kotcher, B. Kothari, A. Koubarovsky, A. V. Kozelov, J. Kozminski, A. Kryemadhi, S. Krzywdzinski, S. Kuleshov, Y. Kulik, A. Kumar, S. Kunori, A. Kupco, T. Kurča, J. Kvita, S. Lager, N. Lahrichi, G. Landsberg, J. Lazoflores, A.-C. Le Bihan, P. Lebrun, W. M. Lee, A. Leflat, F. Lehner, C. Leonidopoulos, J. Leveque, P. Lewis, J. Li, Q. Z. Li, J. G. R. Lima, D. Lincoln, S. L. Linn, J. Linnemann, V. V. Lipaev, R. Lipton, L. Lobo, A. Lobodenko, M. Lokajicek, A. Lounis, P. Love, H. J. Lubatti, L. Lueking, M. Lynker, A. L. Lyon, A. K. A. Maciel, R. J. Madaras, P. Mättig, C. Magass, A. Magerkurth, A.-M. Magnan, N. Makovec, P. K. Mal, H. B. Malbouisson, S. Malik, V. L. Malyshev, H. S. Mao, Y. Maravin, M. Martens, S. E. K. Mattingly, A. A. Mayorov, R. McCarthy, R. McCroskey, D. Meder, H. L. Melanson, A. Melnitchouk, A. Mendes, M. Merkin, K. W. Merritt, A. Meyer, M. Michaut, H. Miettinen, J. Mitrevski, N. Mokhov, J. Molina, N. K. Mondal, R. W. Moore, G. S. Muanza, M. Mulders, Y. D. Mutaf, E. Nagy, M. Narain, N. A. Naumann, H. A. Neal, J. P. Negret, S. Nelson, P. Neustroev, C. Noeding, A. Nomerotski, S. F. Novaes, T. Nunnemann, E. Nurse, V. O'Dell, D. C. O'Neil, V. Oguri, N. Oliveira, N. Oshima, G. J. Otero y Garzón, P. Padley, N. Parashar, S. K. Park, J. Parsons, R. Partridge, N. Parua, A. Patwa, P. M. Perea, E. Perez, P. Pétroff, M. Petteni, L. Phaf, R. Piegaia, M.-A. Pleier, P. L. M. Podesta-Lerma, V. M. Podstavkov, Y. Pogorelov, B. G. Pope, W. L. Prado da Silva, H. B. Prosper, S. Protopopescu, J. Qian, A. Quadt, B. Quinn, K. J. Rani, K. Ranjan, P. A. Rapidis, P. N. Ratoff, N. W. Reay, S. Reucroft, M. Rijssenbeek, I. Ripp-Baudot, F. Rizatdinova, R. 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The measurement of the inclusive differential cross sections for $\Upsilon(1S)$ production published in our recent Letter [1] requires a correction for an increase in the reported integrated luminosity. The instantaneous luminosity at D0 is measured by counting the number of inelastic collisions that produce charged particles within the acceptance of the luminosity monitor [2]. The determination of the luminosity has recently been improved through studies of the multiplicities observed in the luminosity monitor [3]. These studies indicated that the fraction of observable inelastic collisions was overestimated in our previous analysis [4]. The result of these improvements is to increase the assessment of the total integrated luminosity for this analysis by 16.5% to 185 ± 11 pb^{-1} and to decrease the estimated uncertainty from 6.5% to 6.1%. The recalculated cross sections are shown in Table I.

It should be noted that the emphasis of our Letter was on the measurement of the differential $\Upsilon(1S)$ cross section in three different rapidity regions and $d\sigma(\Upsilon(1S))/dy \times \mathcal{B}(\Upsilon(1S) \to \mu^+\mu^-)$ per unit of rapidity was given as a matter of completeness. The shapes of the differential cross sections remain unchanged. The corrected measured cross section $\sigma(\Upsilon(1S)) \times \mathcal{B}(\Upsilon(1S) \to \mu^+\mu^-)$ for the region $|y^\Upsilon| \leq 0.6$ (cf. Table I) is compatible with the CDF result [5] of $680 \pm 15(\text{stat}) \pm 18(\text{syst}) \pm 26(\text{lum})$ pb for a $p\bar{p}$ center-of-mass energy $\sqrt{s} = 1.8$ TeV and with a small increase in the cross section predicted for 1.96 TeV [6].

[1] V. M. Abazov *et al.* (D0 Collaboration), Phys. Rev. Lett. **94**, 232001 (2005).
[2] V. M. Abazov *et al.* (D0 Collaboration), Nucl. Instrum. Methods Phys. Res., Sect. A **565**, 463 (2006).
[3] T. Andeen *et al.*, FERMILAB Report No. FERMILAB-TM-2365, 2007.
[4] T. Edwards *et al.*, FERMILAB Report No. FERMILAB-TM-2278-E, 2004.
[5] D. Acosta *et al.* (CDF Collaboration), Phys. Rev. Lett. **88**, 161802 (2002).
[6] T. Sjöstrand, L. Lönnblad, and S. Mrenna, arXiv:hep-ph/0108264; the PYTHIA quarkonium generator is based on color-singlet calculations by E. W. N. Glover, A. D. Martin, and W. J. Stirling, Z. Phys. C **38**, 473 (1988).

TABLE I. Fitted number of events and $d\sigma(\Upsilon(1S))/dy \times \mathcal{B}(\Upsilon(1S) \to \mu^+\mu^-)$ per unit of rapidity.

$\lvert y^\Upsilon \rvert$	Number of $\Upsilon(1S)$	$d\sigma(\Upsilon(1S))/dy$ (pb)
0.0–0.6	$12,951 \pm 336$	$628 \pm 16(\text{stat}) \pm 63(\text{syst}) \pm 38(\text{lum})$
0.6–1.2	$16,682 \pm 438$	$654 \pm 17(\text{stat}) \pm 65(\text{syst}) \pm 40(\text{lum})$
1.2–1.8	$17,884 \pm 566$	$515 \pm 16(\text{stat}) \pm 48(\text{syst}) \pm 31(\text{lum})$
0.0–1.8	$46,625 \pm 939$	$597 \pm 12(\text{stat}) \pm 58(\text{syst}) \pm 36(\text{lum})$