Errata in the Paper back Version

August 11, 2021

1. Page 4, in (1.2.2) "$f(x)$" should be "$f'(x)$"
2. Page 50, in Exercise 2.9 line 2, replace "$w(x)dx$" by "$\sigma(x)dx$".
3. Page 73 line 3, "(Ismail 1985)" should be "(Ismail 1998)".
4. Page 76 below (3.7.3), replace "$M_{n,1}, M_{n,2}$" by '$M_{1,n}, M_{2,n}$"
5. Page 83, after "=" in (4.2.5) insert "-" to read "-[$\cdots$".
6. Page 85 in (4.2.13), replace "$(s)_n$" by "$(s+1)_n$". On the next line replace "min" by "max".
7. Page 91 in the denominator of the second line in (4.3.15), change "ν" to "μ" and z to ζ.
8. Page 107 in the equation between (4.7.4) and (4.7.5) change "$\prod_{J=1}^n$" to "$\prod_{j=1}^n$".
9. Page 107, two lines from the bottom, replace $(s_{ij})^k$ by $(s_{ij})^{k_{ij}}$.
10. Page 117, the left-hand side of (4.8.9) should be $z^{-\alpha/2}J_\alpha(2\sqrt{z})$".
11. Page 117, line 2 from below, change "$(s_{i,j}/2)^k$" to "$(s_{i,j}/2)^{k_{i,j}}$".
12. Page 126, the first term on the left-hand side of (4.10.16) should be "$\theta_n'(z)\theta_n(-z)$".
13. Page 130, insert dx in the integral in line 2 from the bottom.
14. Page 131 in Exercise 4.13 "$\frac{H_{n-2k}(x)}{(n-2k)!}$" to "$\frac{H_{m-2n}(x)}{(m-2n)!}$".
15. Page 136, move the number (5.2.3) to the equation below it.
16. Page 136 5 lines from the bottom replace "$o(t)$" by "$o(\delta t)$".

17. Page 137 below (5.2.10) insert "that" after "It is clear" to read "It is clear that".

18. Page 138 below (5.2.16), replace "eigenvalues of A_N" by "eigenvalues of $-A_N$". Equations (5.2.17)-(5.2.18) should read

$$\begin{aligned} \mathbf{F_j} \qquad &:= \rho\,(x_{N,j})\,(F_0(x_{N,j}),\ldots,F_{N-1}(x_{N,j})), \\ \frac{1}{\rho\,(x_{N,j})} \quad &:= \textstyle\sum_{j=0}^{N-1} \frac{F_j^2(x_{N,j})}{\zeta_j} = F_N'\,(x_{N,j})\,F_{N-1}(x_{N,j})\frac{\lambda_{N-1}}{\zeta_N}, \end{aligned}$$

19. Page 138 three lines below (5.2.18) replace "the vector $F_1,\ldots,F_N$" by "the vectors $\mathbf{F}_1,\ldots,\mathbf{F}_N$".

20. Page 138 equation (5.2.19) replace "ζ_n" by "ζ_N".

21. Page 148 in equation (5.4.5) change $Q_n^\lambda(x;a,b)$ to $Q_{n-1}^\lambda(x;a,b)$

22. Page 195, in (6.5.8) replace $\left(\frac{z}{2}\right)^{n-2k}$ by $(2z)^{n-2k}$.

23. Page 222 in (8.1.2), replace "c_n" by "μ_n".

24. Page 222 in (8.1.4), replace "c_{j-k}" by "μ_{j-k}".

25. Page 255, the left-hand side of (9.0.8) should be "$(p_n^2(x))^N$".

26. Page 259 in (9.1.11), replace "$a_{n,k}$" by "$c_{n,k}$".

27. Page 264 in line 6 of —S 9.3, "diference" should be "difference". One line below "nonegativity" should be "nonnegativity".

28. Page 271, in the middle line of (9.4.8) replace "b_ℓ" by "$b_\ell t_\ell$"

29. Page 284, in (10.1.6), replace "$= -\sum_{k=0}^{n-1}$" by "$= f_n(x) - \sum_{k=0}^{n-1}$".

30. Page 285, in (10.1.7), replace "$\mathcal{E}(0,t) = 1$" by "$\mathcal{E}(x,0) = 1$".

31. Page 326 in (13.1.27), replace $(-q;q)_n$ by $(q;q^2)_n$

32. Page 326 the last line should read "The above and (13.1.5) imply (13.1.29). The proof of (13.1.30) is similar."

33. Page 331 multiply the right-hand side of (13.2.21) by 2π.

34. Page 338 line 6, replace "$\equiv 1 \pmod 5$" by "$\equiv 2 \pmod 5$".

35. Page 351, at the end insert: Prove the Leibnitz rule

$$(D_q^n fg)(x) = \sum_{k=0}^{n} \begin{bmatrix} n \\ k \end{bmatrix}_q (D_q^{n-k} f)(q^k x)(D_q^k f)(x). \tag{0.1}$$

36. Page 354, in (14.1.13) replace $q^{1/2}e^{i\theta}$ by $q^{1/4}e^{i\theta}$.

37. Page 360, in (14.4.4), replace $q^{n+\nu}$ by q^{ν}

38. Page 370, in (14.6.16), replace "$H_m(y)$" by "$H_m(y|q)$".

39. Page 378, on line 3 of §15.1, replace "§20.4" by "§20.5".

40. Page 381, in (15.1.9), replace

$$p_1(x, t_1, t_2|q) = t_1(2x - t_1 - t_2)$$

by

$$p_1(x, t_1, t_2|q) = \frac{t_1(2x - t_1 - t_2)}{1 - t_1 t_2}$$

41. Page 382, in (15.1.2), replace "$|t_1, |t_2| < 1$" by "$|t_j| < 1, 1 \le j \le 4$".

42. Page 402, above (15.7.13), replace (12.5.8) by (12.5.6).

43. Page 418 in equations (15.10.19)–(15.10.20) ${}_8W_7$ should be ${}_{10}W_9$. Also replace $t_2e^{-i\theta}$ by $t_1e^{-i\theta}$ in line 2 of (15.10.19).

44. Page 418, replace $t_2e^{-i\theta}$ by $t_1e^{-i\theta}$ in line 2 of (15.10.20).

45. at the end of page 425 add the following exercise: Show that

$$p_n(x; q, -q, \sqrt{q}, -\sqrt{q}|q) = (q^{n+2}; q)_n U_n(x). \tag{0.2}$$

46. Page 443 in the last line of equation (16.4.1) replace "β" by "α" twice.

47. Page 443, last line "$1 \le j \le 5$" should be "$1 \le j \le 4$".

48. Page 442, the left-hand side of (16.4.4) should be $c_{n,k}(\mathbf{a}, \mathbf{b})$.

49. Page 445, in the equation in the middle of the page at the end $\sum_{j=0}^{n-k} \cdots$ insert q^j.

50. Page 475, the right-hand side of (18.2.26) should be

$$\frac{(q;q)_n a^n}{(qa;q)_\infty q^{n^2}}\,\delta_{m,n}.$$

51. Page 477, in (18.4.1) the sum should be $\sum_{n=0}^{\infty}$.

52. Page 504, in (19.5.2), $r+s$ should be rs, twice.

53. Page 562, the last right-hand side of (21.8.46) should be

$$\frac{\sqrt{\pi}q^{-n}}{\gamma(q;q)_n}\,\delta_{m,n}.$$

54. Page 697, the reference to Wimp, J. (1985), replace "10:887–895" by "16:887–895".