

Here are known misprints (I am really sorry and apologize for the inconvenience they may have caused) and amplifications to the book ‘Function Field Arithmetic’. If you find any more corrections, I will be grateful to receive those. **Non-obvious misprints which may confuse reader are in bold face.**

1. Page viii, 4th line of paragraph 3 from bottom: Drop ‘a’ (June 04)
2. Pa. 9, 1.2, third para.: ‘by a finite number of appropriate quadratic transformations’ should be ‘by a finite number of blow-ups’.  
(Though blow up equations are quadratic, ‘quadratic transformation’ is a standard terminology used for standard Cremona transformations. These are used to get from a singular plane model of a curve to plane model with ordinary singularities. This is usually the best you can do with plane model and quite useful to do calculations (See books by Fulton or Araberello-Cornabala- Griffiths-Harris or Walker or Abhayankar or Hartshorne). One gets non-singular (not necessary plane model) model by blowing ups which separate these different tangents at ordinary singularities. Curve can be embedded in  $P^3$ , and generic projection (over algebraically closed field) to plane gives model with ordinary singularities.) (May 04)
3. Pa. 12, last para.: ‘poles that functions can have at P’ should be ‘poles that functions, with no other poles, can have at P’. In the next sentence, ‘zero of order’ should be ‘zero at P of order’. (Apr04)
4. Pa. 14, last but one display, drop ‘h’ in front of the last sum.
5. Pa. 18, Para. 2, a counter-example to LMQ75 result quoted, giving 8th class number one, positive genus function field is given by Stirpe (on Arxiv, to be published in JNT). See also pa. 65, 273 notes. (Feb 14)
6. Pa. 20, last equation, left-most  $P/P'$  should be  $P'/P$ .
7. Pa. 29, last line of Para. 3, ‘Mocizuki’ should be ‘Mochizuki’, and last line of para. 4, add ‘free’ before ‘profinite’.
8. Pa. 37, 2.2.4 :  $\phi\rho_a = \rho_a\phi$  should be  $\phi\rho_a = \rho'_a\phi$ . (Apr04)

9. Pa. 40, (i) first displayed equation, the  $\rho_i$  on the right should be  $\rho[i]$ , (ii) 4th para, 2nd line,  $k$  should be  $F$ , (iii) Exa. 2.3.1:  $\rho_I = \rho_y - c\rho_x = (y - cx) + \tau$ . Note  $y - cx = -c(x + cy)$  and  $c$  is the constant, so the conclusion  $I$  is generated by  $x + cy$  still holds. (Thanks to Alex Lara for pointing out these misprints). (Oct 08)
10. Pa. 41, line 2, the last  $\rho[\wp]$  in the exact sequence should be  $\rho[\wp^e]$ . (Though it is ok, it is better to replace exponents  $e$  and  $e + 1$  by say  $s$  and  $s + 1$  to avoid apparent clash with next use of  $e$  in induction). (Thanks to Javier Diaz-Vargas for pointing this out) (Oct08).
11. Pa. 55, thm 2.10.3, the reference 2.11.2 should be 2.11 (b) (May07)
12. Pa. 59, displayed formula for the resultant has wrong sign. Probably it should be  $(-1)^{\deg(A)\deg(B)}$  as in the classical case, I have not checked yet. (Thanks to Javier Diaz-Vargas and Alex Lara for pointing this out). (Oct 08).
13. Pa. 60, para.2, the obvious necessary condition that zeros prescribed should be in the disc of convergence is forgotten.  
 last but one para. fourth line,  $a_d$  should be  $f_d$ . (That it is claimed that  $d > 0$  should be clear from the context, but in usual ‘preparation’ situation  $d$  can be zero, So here is the explicit version of what is said: in that case we change  $f(x)$  by  $v^{m_k} f(x/v^k)$ , where  $v$  is uniformizing parameter and  $-m_k = \min(v(f_i) - ik)$  which exists because of entireness and is negative if  $k$  is sufficiently large). (Oct 08)
14. Pa. 65, Para.3, 7 examples of LMQ75 should be changed to 8, due to counter-example to LMQ 75 given by Stirpe, but for A’s still 4 examples given here suffice. (See also notes for pa. 18 and 273). (Feb 14).
15. Pa. 66, last but one paragraph, as signs (of  $a$  etc) were not chosen, better to say that the displayed equality obtained after taking derivatives at  $x = \rho_c(\lambda)$  is of principal ideals or up to sign, which is enough for the argument. (Oct. 08)
16. Pa. 67, Par. 3 line 5,  $f(x^q - 1)$  should be  $f(x^{q-1})$ . (Oct 08).

17. Pa. 68, line 3 from bottom,  $\mu_{\rho'}(\pi^{-1})$  should be  $\mu_{\rho'}(\pi)^{-1}$ . Thanks to Alex Petrov for pointing out this misprint. (Oct 08)
18. Pa. 71, line 1 of proof of prop. 3.3.3,  $\wp$  at 2 places should be replaced by  $w$  (prime above it). Thanks to Alex Petrov for pointing out this misprint. (Oct 08)
19. Pa. 75, (i) line 5 in 3.5.2, ‘the following proof’ should be ‘the proof above’, (ii) line 7 from bottom: ‘ $\tau^3$  coefficients’ should be ‘ $\tau^4$  coefficients’. Thanks to Alex Lara for pointing this out. (Nov 08)
20. Pa. 76, (i) 3.6.1, line 2:  $A$  should be  $m$ , (ii) last line, ‘of of’ should be ‘of’. (Thanks to Alex Lara for pointing these out) (Nov08).
21. Pa. 102, Example 4.5.1,  $\Pi(9)$  should be  $D_2 = (t^9 - t)(t^9 - t^3)$ . (Thanks to Alex Lara for pointing this out) (Oct 08).
22. Pa. 103, line 5-6. ‘as  $i \rightarrow \infty$ , ...is  $-1$ ’ should be replaced by ‘as  $i \rightarrow \infty$ , since for large enough fixed  $\ell$ , if  $n = \lfloor i/d \rfloor - \ell$ , then  $D_{i,v}$  is a  $q$ -power power of product of all elements of  $(A/v^n A)^*$  and hence is  $-1 \pmod{v^n}$ . (See Gamma Annals 1991 paper pa. 44 for details).
23. Pa. 107, line 4, ‘Essentially’ is not literal, it signals omitting the proof which is done by looking at  $q$ -power orbit actions which consist of permuting as mentioned, and showing total sum is as mentioned.
24. Pa. 115, second displayed equation, the exponents of  $q$  should be changed from  $t_i$  and  $t_i - d$  to  $t_i - c$  and  $t_i - d - c$  respectively.
25. Pa. 123, line before Theorem 4.11.3,  $K(\lambda_t)$  should be  $K(\lambda_t)\mathbf{F}_v$
26. Pa. 124, table, second column,  $A_{>0}^*$  should be  $A_{>0}$ .
27. Pa. 134, thm. 4.11.1, third line,  $a_k$  should be  $f_k$ .
28. Pa. 137, first displayed eqn: drop rightmost  $d_\tau$  (Sep04)
29. Pa. 146, last but one line,  $B_{q^{h-1}}$  and  $D_h/L_h$  should be replaced by  $(-1)^h B_{q^{h-1}}$  and  $D_h/L_h^2$  respectively. (Mar11)
30. Pa. 149, last line:  $[n]!$  used here is defined in the next line. (Nov04)

31. Pa. 151, para. 3 from bottom: Section 15 should be Section 14. (Sep04)
32. Pa. 155, theorem 5.1.2, second line, can replace ' $\mathcal{F} - W$ ' to just  $\mathcal{F}$ .
33. Pa. 158, add 'when  $A = F_q[t]$ ' at the end of first line of 5.2.
34. Pa. 158, displayed equation, last sum, replace even by 'even'.
35. Pa. 160, thm. 5.2.8, second line change even to 'even'.
36. Pa. 165, first displayed equation: Second  $\beta(k)$  should be  $\beta(f)$ . (Apr07)
37. Pa. 170, remark 5.4.10: 'These results imply class groups components vanishing by 5.3.8' should be better phrased and amplified as 'these results (5.4.6-5.4.8) imply non-vanishing of certain class group components, for all  $\wp$ -th cyclotomic fields, for all  $\wp$ , by 5.3.8, in the class number one case. The thesis of Diaz-Vargas referred in 5.4.8 (ii) gives more examples using zeta functions defined using all ideals rather than just principal ideals in the general case' (May 04)
38. Pa. 173,  $d$  is defined as degree of prime and used in that paragraph, but a couple of paragraphs later,  $d$  runs through all degrees giving clash of notation which should have been avoided. (Thanks to Alex Lara for pointing this out (Jan 11)).
39. Pa. 175, statement and proof of thm 5.6.3, minus sign in front of the Laurent expansion at  $x = 0$  is missing and the exponent of  $x$  in expansion at infinity should be ' $-n - 1$ ' rather than ' $-n + 1$ '. In 5.6.4 (2),  $g_k$  is the Carlitz factorial of  $k$ , i.e.,  $\Pi(k)$ . (Oct05)
40. Pa. 185, In the 5th displayed line, the middle  $w_2$  should be removed, and in 6 th displayed line the last  $n_k^s$  should be replaced by  $n^{s_k}$ . (Thanks to Alex Lara for pointing it out). (Mar 11).
41. Pa. 199, para.-2 of 5.11: 'maximl' is 'maximal'. (Nov04)
42. Pa. 206, last but one paragraph: Drop 'and' after 'this'.
43. Pa. 215, insert 'The  $l$ -adic etale cohomology of the limit  $M^r$  of the projective system of moduli  $M_j^r$  of 3.7 has action of Galois group of  $K$  as usual, as well as action of  $Gl_r$  of finite adeles of  $K$ , by the lattice/torsion

connection.’ before the paragraph ‘Drinfeld matched...’. After the paragraph insert ‘This was fully successful for  $r = 2$ , when  $M^2$  is a curve and compactification issues are simple.’

Later on this page, ‘Pink later proved’ should be replaced by ‘Pink, assuming resolution of singularities, and Fujiwara, without this assumption, later proved’. (Nov04)

44. Pa. 229, third para. 4.15(b) should be 4.14(b). (Sept04)
45. Pa. 247, last displayed line: switch  $[a]$  and  $d[a]$  (Nov04)
46. Pa. 250, 2nd sentence last para., ‘ $j \leq 0$ ’ should be ‘ $j \geq 0$ ’. (Thanks to Furusho for pointing this out.)(Feb 06)
47. Pa. 255, first displayed equation ‘ $exp_n$ ’ is missing to the right of the first equation. (Feb. 06)  
Remarks 7.6.2 (1), 2nd line  $x_n - i$  should be  $x_{n-i}$ . (Thanks to Furusho for pointing this out.) (Feb. 06)
48. Pa. 258, last line, ‘as in 0.3.4’ should be ‘as in the paragraph above’.
49. Pa. 259, the sign-normalization of  $\rho$  coming from  $f$  and the normalization of the differential before Theorem 7.7.6 does not work, when  $\delta > 1$ . (Thanks to Angus Chung for pointing it out in Sep. 20!). For the details and correction, see update file entry on the original Inventiones paper ‘Shtukas and Jacobi sums’ of 1993.
50. Pa. 266, last displayed equation,  $d[h_{ni}]$  should be  $d[h_{ni}]_n$ . (Thanks to Alex Lara for pointing it out (Sep 11)).
51. Pa. 267, examples 8.1.2 (4) This line should be dropped.
52. Pa. 273, first line: 4.16 should be 4.15. (Jan 05).

In the statement of theorem, one more exception needs to be put in. This is the counter-example found by Stirpe (See Arxivs, to be published in JNT) to the paper LMQ75 quoted. It is the class number 1 field of genus 4 and has no places of degree 1, 2, 3. (On page 274, we quote LMQ75 to conclude that if  $g > 3$  then  $h > 1$ , this is false as shown by this example). (Feb 14)

53. Pa. 281, last but one para. bracket misprinted in  $f^{(n)}$ . (may 05)
54. Pa. 281-282, In last displayed formula of p 281 and third displayed formula on p 282, interchange  $t$  and  $T$ . In third and fifth displayed formula on p 282, change  $e^*$  to  $e_*$ . (May 05).
55. Pa. 283, last para. put space between ‘entry’ and ‘Res’. (May05). Last line: correct indexing is  $a_i = t^{i-1}$ ,  $b_j = t^{d-j}$ . (Aug05).
56. Pa. 285, second displayed equation last sum, upper limit  $\infty$  is missing.
57. Pa. 295, 5th line in 8.9 and Pa. 296, second sentence before Thm 8.9.3, ‘ $p$  does not divide  $h$ ’ should be ‘ $p$  does not divide  $h^-$ ’(Aug07)
58. Pa. 296, last line, which should be which is.
59. Pa. 304, 2nd para. ‘second section’ should be ‘third section’(Mar07). Proof of Thm. 9.1.1 given here is only for rational number field and function field over finite field.
60. Pa. 307, Displayed eqn (1) and Rem. 9.2.1 (1): Common notation  $a'_{n+1}$  for  $\alpha_{n+1}$  is used in remark. In the displayed eqn,  $q_{n+1}$  should be  $q'_{n+1} := a'_{n+1}q_n + q_{n-1}$ , another common notation (not defined here)(mar05)
61. Pa. 311, Remark 9.2.4 (2): In ‘if’ part, the tails are the ‘same’ or are ‘related by alternating signs’ as explained on second para. of pa. 307. The ‘same’ can be replaced by this in ‘if and only if’ also. Even quadratic periodicity is modified by such signs in finite field as explained in second para, of pa. 307 and the de Mathan, Schmidt references in this remark. (May 06).
62. Pa. 314, 2nd line from the last, ‘minus’ sign is missing from the second quantity (e.g., in front of first log). (Thanks to Alain Lasjaunias for pointing this out) (Sep 11).
63. Pa. 332, line 2,  $c_j$  should be  $f_j$ . (Oct. 11)
64. Pa. 338, First line after remarks: 5.9 should be 5.10. First displayed equation: condition  $n_1 \neq n_2$  should be dropped. (Oct05). In the next line, 5.10.2 should be 5.10.12 (Dec06).

65. Pa. 340, paragraph after theorem, line 6, remove ‘same type’.
66. **Pa. 344, Example 11.1.5, (1) in the automata table, entries in the column headed by  $s_2$  should be  $s_3, s_4$  rather than  $s_2, s_3$  respectively. In (2), line 2,  $s_2$  and  $s_3$  should be switched, (so that  $Out(s_2) = 1$  and  $Out(s_3) = 0$ .)** (August 04)
67. Pa. 348, in Theorem 11.2.2 (5),  $n'_{i+1}/n_i$  should be  $n'_{i+1}/n'_i$ , and 0 in  $d > 0$  is missing. In the hypothesis of the theorem it is implicit that  $n_i$  is an increasing sequence (and thus  $\mathcal{S}$  is infinite). (June 05)
68. Pa. 349, last paragraph, ‘turns out to be a trivial monomial’ should have been rephrased as (as mentioned on page 351) ‘turns out to be a trivial monomial after a preliminary reduction as in the statement of Theorem 4.6.4, namely translating the arguments by integers (which multiplies the monomial by a rational function) to get monomial in gamma at fractions which are their own ‘brackets’’. (Apr 07)
69. Pa. 353, whole first paragraph of 11.4, ‘First, ... when  $p = 2$ ’ should not have been there and can safely be dropped altogether. (It is editing mistake. It is actually another proof (in case  $p = 2$ ) mentioned later in Remark 11.4.3 (2) of Theorem 11.4.1.) (May 06)
70. Backcover: On line 7, ‘Basics’ should be Basic. (June 04)