

Errata for the book

Rational Homotopy Theory

by

Y. Felix, S. Halperin and J.-C. Thomas

The following items are errors or misprints for our book *Rational Homotopy Theory*. The main part of this list has been communicated to us by John Oprea, (oprea@math.csuohio.edu). If you find errors or mistakes in our book, please inform us (felix@agel.ucl.ac.be). We will add directly your items to the list.

1. p. xiii paragraph 2 lines 2 and 4. Replace identity by identify. line -2. A free Lie model of a topological space
2. Table of Contents
II Chapter 11. cancel (b) before (d)
IV Chapter 24. c) should be (c)
VI Chapter 38, line 1. Replace (b) by (a).
3. p. 6 line -2 above Example 1. The reference for Tietze extension theorem is [44], J. Dugundji, Topology. Allyn and Bacon, Boston, 1965.
4. p. 11 line 9 after Definition. Homotopies instead of homotopics.
5. p. 15 line 1 of proof of Lemma 1.8. A homotopy $H: A \times I \rightarrow Y$ starting
6. p. 34 line -11. Finitely many cells E_n .
7. p. 39 Exercise 1. Should be $k \leq r + s$ instead of $k \leq r + s - 2$.
8. p. 58 Definition of Fundamental Class. Class of $[S^m]$ written twice.
9. p. 63 line 4. is called a cellular Eilenberg- MacLane space.
10. p. 64 Exercise 5. Remove the word ``of'' after natural.
11. p. 76 Exercise 4. 'Morphim' should be 'morphism'.
12. p. 86 Exercise 2. A class is transgressive ... $d^m \phi = 0$ and $d^{m+1} \phi \neq 0$. (So replace that with and.)
13. p. 119 proof of 10.4 line 3 after ii. Tex error. Move up $k < n$ such that.
14. p. 127 line -3. Sub simplicial should be sub-simplicial.
15. p. 133 last line. corresponding instead of correspond.
16. p. 139 last two lines. Should be ϕ_0 to ϕ_1 and $\phi_0 \sim \phi_1$.
17. p. 148, last line. The Surjective Trick. Add $a \mapsto a$, $\delta a \mapsto da$.
18. p. 151, Line 1. Replace the definitions of the morphism by

$$t_0 \mapsto (t_1, 1 - t_2) \quad t_1 \mapsto (1 - t_1, 0) \quad t_2 \mapsto (0, t_2)$$

19. p. 154 Prop. 12.10 (ii). Tex error. Move up second line.
20. p. 163 paragraph above Exercises. Two things. First, non homotopy should be non-homotopy. Secondly, the last paragraph beginning with *In fact...* must be cancelled because the notion of formality used by Merkulov is different from our notion of formality.
21. p. 192 paragraph above Example 2 line 2. 'Using by' should just be 'using'.
22. p. 220 line 7. $Q(1) \cong S^3$, not S^7 .
23. p. 228 displayed equation middle of page. Should be

$$\pi_* \left(\prod_{\bullet} X_a \right) = \bigoplus_a \pi_* (X_a).$$

24. p. 257 paragraph after end of proof at top. Remove the word "a". Should be "are not morphisms ...".
25. p. 259 Exercise 4. quasi-isomorphism.
26. p. 279 Prop. 20.11. TeX error on placement of "proof". Should be on new line.
27. 297 line -2 above Exercises. Should be, so is $C(\Omega X; \mathbb{E})$...
28. p. 309 after Definition. Add the following after the first part. Given (L, d) , a free model is given by $\psi: \mathcal{L}(C, (L, d)) \xrightarrow{\cong} (L, d)$.
29. p. 312 Exercise 1, displayed equation. S^n should be S^{2n-1} .
30. p. 322 First sentence. Should be, bridge from topology to algebra
31. p. 376 The reference in the Corollary should be Theorem 28.6, not 28.1.
32. p. 380 Exercise 3. Read same rational homotopy type instead of same homotopy type. Integrally, $S^3 \rightarrow Sp(2) \rightarrow S^7$ is a counterexample since $Sp(2)$ doesn't split as a product.
33. p. 407 line 3. Should be retracts instead of retreats.
34. p. 432 line -3 of proof of Example 1. Reference should be to Theorem 31.17 instead of 31.18.
35. p. 449 second displayed equation. Should be

$$r \leq -\chi_n(M);$$

i.e., $-\chi_n(M)$ is an upper bound for

36. p. 510 Exercise 3. Should be homotopy fibre instead of homology fibre. Also should be $\partial: \Omega Y \rightarrow F$ and $\{*\} \times \Omega Y \rightarrow X \times_V P Y = F$.
37. p. 515 Exercise 2b. Remove "or else".
38. p. 518 line 4. Should be Gottlieb instead of Goltlieb.
39. p. 519 line 5 after 12. Should be, It would also show