Errata for *Surgery on compact manifolds* by C.T.C. Wall
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Please let me know of any further misprints/errors by e-mail to a.ranicki@ed.ac.uk
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p. xi l. –4 Strictly speaking, the actual disproof of the manifold Hauptvermutung was first obtained by Kirby and Siebenmann in 1969 – see the 1967 papers of Casson and Sullivan published in 1996 in the Hauptvermutung Book [R11]
http://www.maths.ed.ac.uk/~aar/books/haupt.pdf
for what they actually did. The prehistory of the disproof is given in the paper of Novikov *Classical and modern topology. Topological phenomena in real world physics* GAFA 2000 (Tel Aviv, 1999), Special Volume, Part I, 406–424, e-print
http://arXiv.org/abs/math-ph/0004012
Also, there is an account of the Hauptvermutung by Rudyak in the e-print
http://arXiv.org/abs/math.AT/0105047

p. 4 l. 9 $\sigma_n S(\alpha) \ = \ 0$

p. 8 l. –16 Insert *for a finite simplicial complex X* before *every normal map*

p. 15 l. –10 Replace by

$$H_{k+1}(H \cup \partial N_0, \partial N) \to H_{k+1}(\phi) \to H_{k+1}(\phi_0) \to H_k(H \cup \partial N_0, \partial N)\,.$$

p. 20 l. 5 $\pi_1(U - K, \partial U)$

p. 20 ll. 9, 25 "Corollary 2.4.2" should be "second corollary (not indexed) to Theorem 1.7"

p. 20 l. 13 "Now let S^1 be a circle in $C := S^m - K$"

p. 20 ll. 17,18,25,26 replace the 6 occurences of the variable n with m

p. 20 l. 17 "Thus if any $\pi_i(C)$ with $2 \leqslant i \leqslant m-3$"

p. 24 l. 1 "$K \times K^*$"

p. 29 l. 13 "$Z = Y \cup Y'$"

p. 35 l. –8 " $\partial_n\pi \xrightarrow{i} \delta_n\pi$ "

p. 35 l. –7 "$L_{m-1}(\partial_n\pi)$"

p. 36 l. 12 "*Given an object P of type* $\mathbf{2}^2$"

p. 40 l. –15 "$H_k(U, U \cap M) \cong H_k(U \cup M, M) \to K_k(N, M)$"

p. 40 l. –13 “s-base on $K_k(N, M)$”

p. 41 l. 3 “hence so is the upper ϕ^*.”

p. 43 l. 2 “$(Y \times I; Y \times 0 \cup X \times I, Y \times 1)$”

p. 54 l. 4 Replace by $\phi : (M; \partial_- M, \partial_+ M) \to (X \times I; X \times 0 \cup \ \partial X \times I, X \times 1)$

p. 55 l. –5 “s-cobordism of $\partial_+ M$ to $\partial_+ M'$”

p. 59 l. 12 “this is obvious *a priori*, as ∂U is”

p. 65 l. 10 “Hence $A \oplus A^{-1} \in RU(\Lambda)$”

p. 68 l. 21 “since by (6.3) $RU(\Lambda)$ is a normal subgroup”

p. 69 l. 1 “This replaces $X \times I$ by its boundary-connected sum with r copies of $S^k \times D^{k+1}$”

p. 75 l. 4 “We wish to do surgery relative to M_-”

p. 93 l. –3 “$Y' = Y_0 \cup_{\partial H} H$”

p. 96 l. –4 “a map $\Omega : Y \to s_n K$”

p. 97 l. 7 “$\Omega_{\alpha,n,n+1} : Y_{\alpha,n,n+1} \to s_n K_{\alpha,n,n+1} = K_\alpha$”

p. 97 l. 19 “we may suppose by induction that for all $\beta \subsetneqq \alpha$”

p. 98 l. 2 “This proves exactness at $\delta_n K$”

p. 98 l. 3 “Exactness at K follows since $d_* j_* = 0$”

p. 101 l. –2 “Now suppose m is odd; write $m = 2k - 1$, $k \geq 3$”

p. 107 l. –20 “bordism class χ of (M, ϕ, F)”

p. 108 l. –12 “$1 \leqslant i < n$”

p. 111 l. –19 “If $m = n + 3$, the map is surjective.”

p. 111 l. –1 “Then N', and the composite”

p. 112 l. 2 “Moreover, if θ'”

p. 112 l. 6 “normal map (N'', ϕ'', F'')”

p. 112 l. 11 “surgery obstruction θ' for N'”

p. 113 l. –6 “and of $\mathcal{T}^{\mathrm{Diff}}(X, \partial_n X)$”

p. 114 l. 7 “since $\tau_M \oplus \nu' \cong \phi^*(\tau_X \oplus \varepsilon^k)$”

p. 114 l. 12 “defines a fibre homotopy trivialization h of ν'”

p. 114 l. –15 "$\mathcal{T}^{PL}(X \times I, X \times \partial I) \to$"

p. 114 l. –12 "standard structure on $X \times \partial I \cup \partial_n X \times I$"

p. 115 l. 8 "an element α of $[\Sigma(X/\partial_n X), G/PL]$"

p. 120 l. –14 "Then (M, E_0) need not"

p. 121 l. –15 "$V \simeq C \cup M(p) \to$"

p. 122 l. 1 "*(locally flat PL) embedding*"

p. 122 l. –9 "$\tau_L \oplus \phi^*(i^*\nu_{M(p)} \oplus \xi)$"

p. 123 l. 7 "Since $|Y|$ is homotopy"

p. 123 ll. 9, 10 replace A' with A

p. 123 l. –17 "homotopy equivalent to $|Y|$"

p. 124 l. –1 "$(h|C)_*$"

p. 125 l. 6 "$f(|M|)$"

p. 125 l. 16 "$|M|$"

p. 125 l. –9 "inducing A' over M'"

p. 125 l. –7 "glueing along $B = A' \times \partial(V \times 1)$ a copy of $B \times I$"

p. 126 l. –10 "$f : M \to \delta_{n+1} V$"

p. 131 l. –4 Replace $M^{n-1} \to V^{n+q-1}$ by $E \to F$, where (F, E) is the complement of the simple Poincaré embedding $N \to W$, such that $F \cup M(p_E) \simeq W$ with $p_E : E \to N$ the projection of the normal $(q-1)$-spherical fibration and $F \cap M(p_E) = E$.

p. 131 ll. –8, –9, p. 133 footnote Replace $p : X \to Y$ by $P : X \to Y$

p. 133 l. 14 "relative to M"

p. 133 l. 15 "induced on N"

p. 133 ll. 18, 19 "D^q-bundles"

p. 133 l. 18 "$N' \subset W$"

p. 133 l. 19 The surgery problem for D^2-bundles is induced from a relative one for Poincaré tetrads, namely ∂_1 of the surgery problem

$$(W \times I; A', \mathrm{cl.}\,(W \times 1 - A'), W \times 0) \to (M(W \simeq M(p) \cup C); M(p), C, W \times 0)$$

with normal bundle $\nu_{W\times I}$ and canonical stable trivialization of $\tau_{W\times I} \oplus \nu_{W\times I}$ and A' the total space of $\nu_{N' \subset W}$. This represents (cf. p. 96) a tetrad object in $L_{n+q+1}(\Phi)$ with the simple homotopy equivalence on ∂_3 being the identity $W \times 0 \to W \times 0$. Of course, Φ is a triad. (Khan)

p. 133 l. 21 “$L_{n+q+1}(\Phi) \to L_{n+q}(A \to B) \to L_{n+q}(C \to D)$”

p. 133 l. –12 Replace by “The pullback D^q-bundle (M, E) over N induced by the universal fibration for $A \to B$”

p. 133 l. –10 “in the kernel”

p. 134 l. 8 “submanifold $M' \subset V^{n+q}$”

p. 134 l. –3 “Now attach handles”

p. 135 l. 2 “together W_1, W_2 (as in proof of (11.3)), and the same disc bundle”

p. 136 l. 7 “$r(y) = r(x)$”

p. 137 l. –3 “*nonorientable*”

p. 142 l. –03 “along $V_1' \times 1$”

p. 143 l. 12 “split into V_1 and $V_2 = X'\{2\}$”

p. 144 l. 15 Replace 2 occurrences of “$\delta_2 U$” with “$\delta_2 W$”

p. 144 l. –6 Replace “By (12.1)” by “By (10.3)”

p. 145 l. 11 “$\cup(M' \times 1)$”

p. 146 l. 5 “$C = \pi(C)$”

p. 146 l. –12 “(3.1) gives a third sequence (i, j, ∂_2)”

p. 146 l. –5 “and $p_0 r(x)$”

p. 146 footnote “case $A = B$, $C = D$”

p. 147 l. 9 ϕ’s should be Φ’s

p. 159 l. 11 “$H_k(A^+, \widetilde{M}; \Lambda')$”

p. 160 l. –1 “multiplication by g_0”

p. 161 l. 1 Should read *In one case*

p. 161 l. –12 “note that”

p. 161 l. –5 “the lower sequence from (3.1)”

p. 162 l. –5 “$H_{k+1}(\widetilde{V} \times I, \widetilde{V} \times 0 \cup \widetilde{N}; \Lambda')$”

p. 163 l. –12 “a double point of $f_1 : S^k \to M$”

p. 164 l. 11 “with fundamental group π'”

p. 164 l. 21 “$\mu_0(e_i) = b_i$”

p. 165 l. 9 “$M_0 = M - \bigcup f_i(S^k \times \operatorname{Int} D^{k+1})$” and “$\widetilde{M}_0 = \widetilde{M} - \operatorname{Int}(U^+ - U^-)$”

p. 166 l. –14 Replace “for if” by “for”

p. 167 l. –24 “disjoint embeddings $\widetilde{f}_i : (D^{k+1}, S^k) \times D^{k+1}$”

p. 167 l. –22 “embeddings $\widetilde{g}_i$”

p. 167 l. –21 “of $\widetilde{f}_i$ to $\widetilde{g}_i$”

p. 167 l. –15 “spheres $f_i(S^k \times 0) \subset M$”

p. 167 l. –4 “$\widetilde{f}_1, \widetilde{f}_2$”

p. 168 l. –16 “$A^- \cup \widetilde{N}$”

p. 169 l. 2 unlabelled reference “(3)” to second sequence on p. 168

p. 169 l. 12 “N^{2k+1}” and “∂N”

p. 173 l. 3 “$L_3(\mathbf{Z}_2^+)$”

p. 173 l. –10 *established.*

p. 186 l. –1 Remove *a*

p. 206 l. 11 Should read $[P_n(\mathbf{R}), Y] = [P_5(\mathbf{R}), Y]$

p. 217 l. –10 $\Delta(L) = (T-1)^n u$

p. 221 l. –4 Should read *of a representation*

p. 233 l. 16 $H^3(T^n; \mathbf{Z}_2) \cong$

p. 240 l. –9 “Davis [D1]”

p. 255 l. –2 ”*homotopic to a PL homeomorphism through homeomorphisms*”

p. 258 l. 21 The reference to Kirby [K8] should be replaced by a reference to R. Kirby and L.C. Siebenmann, *Normal bundles for codimension* 2 *locally flat imbeddings*, Geometric topology, Park City, Utah, 1974, pp. 310–324. Lecture Notes in Math., Vol. 438, Springer, Berlin (1975).

p. 276 l. 1 Replace (C, ψ) by (C, ϕ)