

Errata to *Automorphic Forms and Representations* by Daniel Bump

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This list of errata includes the list kept at <http://sporadic.stanford.edu/bump/match/errata.html>, with further additions. Line numbers do not count displayed formulas or section headers.

p.4, line 8. “*re*” should not be italicized.

p.6, bottom. The hypotheses on f do not imply that F is of locally bounded variation. Therefore add the hypothesis that f is of bounded total variation. This is true, for example, if $f(x)$ is monotone for $|x|$ large.

p.7, line 7 is missing a period.

p.7, fifth displayed formula. Under the sum, it should read “ $m = -\infty$ ” instead of just “ $-\infty$.”

p.9, fourth displayed formula (Fourier Inversion Formula). Omit subscript of t .

p.10, line -4 . “Exercise 1.7” should be “Exercise 1.1.7.”

p.15, line 1. “Theorem 1.1” should be “Theorem 1.1.1.”

p.15, line 5. “Theorem 1.1” should be “Theorem 1.1.1.”

p.16, Exercise 1.1.9. Both instances of “Exercise 1.2(b)” should be “Exercise 1.1.2(b).”

p.16, Exercise 1.1.10(c). “Exercise 1.2(b)” should be “Exercise 1.1.2(b).”

p.18, line 12. Omit space in $\mathbb{Z}/N\mathbb{Z}$.

p.19, line -10 . Missing a closing absolute value sign in $|\operatorname{re}(\gamma(z))| \leq 1/2$.

p.20, Eq. (2.3). The comma should be outside the matrix.

p.20, proof of Proposition 1.2.3. The bar is used in two different ways, which could be confusing. In the second usage, $\overline{\gamma(F)}$ means the topological closure.

p.24, Exercise 1.2.3(a). “Exercise 2.2” should be “Exercise 1.2.2.”

p.24, Exercise 1.2.3(b). “Proposition 2.3” should be “Proposition 1.2.3.”

p.25, line 2. “(IV.1.16)” should be “Eq. (1.16) of Chapter 4.”

- p.25, Exercise 1.2.9. “Exercise 2.6(c)” should be “Exercise 1.2.6(c).”
- p.29, second displayed formula. The coefficient of q^5 should be 4830, not 2954.
- p.32, comments after Proposition 1.3.5. The estimate should be $a_n \leq Cn^{(k-1)/2+\epsilon}$ for any positive ϵ .
- p.35, bottom. H^1 and H^2 should be H_1 and H_2 .
- p.38, line –5. “Exercise 3.11” should be “Exercise 1.3.11.”
- p.41, line –10. In the Fourier expansion, the exponent of e should be $2\pi inz/t$.
- p.49, last line of proof of Theorem 1.4.4. Eq. (4.10) should be Eq. (4.11).
- p.51, line –12. “Proposition 4.3” should be “Proposition 1.4.3.”
- p.52, Exercise 1.4.13, displayed formula. The last exponent of p should be $k - 1 - 2s$, not $-2s$.
- p.52, lines –12 and –10. The “old” and “new” subscripts should be smaller.
- p.52, line –8. Remove the reference to the the “exercises of section I.4”, since this line immediately follows those exercises.
- p.52, line –4. “Theorem I.4.4” should be “Theorem 1.4.5.”
- p.53, line –10. “ n^{-1} ” should be “ n^{-s} .”
- p.53, line 11. “Theoretic” should not be repeated.
- p.53, line –2, “Whereas tr...” should be “whereas det...”.
- p.57, last line. (3.14) should be (3.16).
- p.58, line 2. Theorem 1.4.3 should be Theorem 1.4.4.
- p.60, line –12, “ $f \in \Gamma_0(N)$ ” should be “ $f \in S_k(\Gamma_0(N), \psi)$.”
- p.67, after third displayed formula, omit the unnecessary “... and the subsequent evaluation of the constant c .”
- p.69, third line from end of proof. “Follows from Eq. (6.5)” should be “follows from Eq. (6.6).”
- p.69, last displayed formula. Γ_∞ should be Γ_∞ .
- p.70, statement of Proposition 1.6.1. “Most simple poles” should be “at most simple poles.”
- p.71, first formula. Γ_∞ should be Γ_∞ .
- p.72, first displayed formula. Omit i in $e^{-4\pi iy}$.
- p.72, after the statement of Theorem 1.6.2, (3.11) should be (3.13).

- p.74, line 3. Proposition 1.6.3 should be Theorem 1.6.2.
- p.75, second displayed formula. The definition of $E_T(z, s)$ should be multiplied by a factor of $\zeta(2s)$.
- p.76, line 2. Do not italicize “*re.*”
- p.77, line 17. “Resulting the assumption from” should be “resulting from the assumption.”
- p.77, line –2. The tensor product symbol should not be there: the index is supposed to be $[\mathfrak{o}^\times : \mathfrak{o}_+^\times]$.
- p.90, Exercise 1.7.2. Insert space before (7.6).
- p.97, second displayed formula. The value of $\chi(\mathfrak{p})$ should be +1 if \mathfrak{p} splits. Also, there should not be a minus in front of 0.
- p.107, Proposition 1.9.1. ϵ should be +1 if f is odd.
- p.107, last displayed formula. $2\pi i|n|y$ should be $2\pi|n|y$ instead.
- p.108, On lines 12 and 17, it is asserted that the Laplacian is positive definite. This should be “semidefinite,” and the reference on line 13 should be to Exercise 2.1.8 instead of Section 2.2.
- p.111, fourth displayed formula. This should have $\chi_D(M)$ instead of $\chi_D(q)$ inside the sum.
- p.118, last paragraph of the proof. The fact that the narrow class number of F is one implies D is prime only when D is not 8 (i.e. F is not $\mathbb{Q}(\sqrt{2})$.) In fact when D is 8, F does have narrow class number 1.
- p.129, first displayed formula. the second partial derivative should be with respect to \bar{z} , not z .
- p.129, (1.2) at bottom. In the definition of L_k , The partial derivative should be with respect to \bar{z} , not z .
- p.130, (1.3). The $iky(\frac{\partial}{\partial x})$ term in this equation is $iky(\frac{\partial}{\partial z})$ in some conventions.
- p.130, (1.5). “ $(f|_k g) = \dots$ ” should be “ $(f|_k g)(z) = \dots$ ”.
- p.131, line –11. \mathfrak{h} should be \mathfrak{h} .
- p.132, line 8. We are not really using Eq. (1.11), but rather a slightly different formula, namely $\langle Tf, g \rangle = \langle f, T^*g \rangle$.
- p.132, line –15. “Self adjoint function of T ” should be “self adjoint extension of T .”
- p.132, line –13. “Function U ” should be “operator U .”
- p.135, proof of Lemma 2.1.2. Not really an error, but replace “closed manifold” by “compact manifold.”

- p.135, line -3. In “ $\omega = u + iv = \dots$,” replace ω by w .
- p.135, last displayed formula. \overline{dw} should be $d\bar{w}$.
- p.137, third displayed formula. The integrals should be switched so as to agree with the order of the measures.
- p.138, second displayed formula. In accordance with the correction on the previous page, the integrals should be switched so as to agree with the order of the measures.
- p.140, line 9. “Completion of \mathfrak{h} of V ” should be “completion \mathfrak{h} of V .”
- p.140, line 20 should be rephrased, since \mathfrak{h} is the space of functions integrable with respect to the measure on $\Gamma \backslash G/Z^+ \cong \Gamma \backslash G_1$ that is induced by the Haar measure on $G/Z^+ \cong G_1$.
- p.140, line -7. “ $\Gamma \backslash G$ is compact” should be “ $\Gamma \backslash G/Z^+$ is compact.”
- p.141, line -15. the boldface “ \mathbb{Z} ” should be a roman “ Z .”
- p.142, line 3. “Section 2.2” should be “Section 2.7.”
- p.143, line 10. “ $C^\infty(\Gamma, \chi, k)$ ” should be “ $C^\infty(\Gamma \backslash G, \chi, k)$.”
- p.143, line 13. “Eqs. 1-1.3” should be “Eqs. (1.1-1.3).”
- p.144, hints for Exercise 2.1.5. In the equation with the integral, the “ π ” in the integrand should be “ ρ .”
- p.144, Exercise 2.1.6. “Proposition 2.1.6” should be “Proposition 2.1.8.”
- p.145, Exercise 2.1.9. “ $\text{End}(V)$ ” should be “ $\text{End}(H)$.”
- p.145, Exercise 2.1.9. Close the bracket at the end of the hint.
- p.148, line -10. Remove the line break.
- p.150, line -12. It should be $\lambda : G \rightarrow \text{Aut}(C^\infty(G))$.
- p.151, second to last displayed formula. The right hand side should be $\frac{d}{du} \phi_g(u, t)|_{u=0}$.
- p.152, first displayed formula. $\frac{\partial}{\partial w} = \frac{\partial}{\partial t} - \frac{\partial}{\partial u}$ should be $\frac{\partial}{\partial w} = \frac{1}{2} \left(\frac{\partial}{\partial t} - \frac{\partial}{\partial u} \right)$.
- p.152, line -3. R should be boldface.
- p.154, line 1. “our final task in this section is...” is not completely accurate. After it is shown that the weight- k Laplacian corresponds under the isomorphism σ_k to the Casimir element, the book proves the commutativity of the spherical Hecke algebra for $GL(n)$ and again claims it is the “final topic of this section” (in the middle of p. 159).
- p.154, line 4. “Section 1” should be “Section 2.1.”
- p.154, line -1. “Conjugate in $SL(2, \mathbb{C})$ ” should be “conjugate by elements of $SL(2, \mathbb{C})$.”

- p.155, Proposition 2.2.5. “Section 1” should be “Section 2.1.”
- p.156, Eq. (2.36) and the two displayed formulas afterwards. k_t is the same thing as κ_t .
- p.159, Proposition 2.2.7 (v). The reference to (ii) and (iii) should instead be to (iii) and (iv).
- p.160, line 3. “Exercise 2.4.2 (a)” should be “Exercise 2.2.6(a).”
- p.162, line 5. The reference to (iii) should instead be to (iv).
- p.163, line 12. $\phi(g)\sigma(\kappa_1)$ should be $\phi(g)\sigma(\kappa_2)$.
- p.163, line –4. Remove “except the trivial representation” because it is redundant.
- p.164, Exercise 2.2.2(c). There are no y ’s in the entries of the matrix in H , so the condition on y in the set should be removed.
- p.164, Exercise 2.2.2(d). There are no x ’s in the entries of the matrix in H , so the condition on x in the set should be removed.
- p.164, Exercise 2.2.4(a). Remove “(i)” after “(a).”
- p.164, Exercise 2.2.4(c). “Homomorphism” is misspelled.
- p.164, Exercise 2.2.4(c). “ $\mathbb{R} \mapsto GL(n, \mathbb{R})$ ” should be “ $\mathbb{R} \rightarrow GL(n, \mathbb{R})$.”
- p.164, line –2. Remove “a” in “a an action”.
- p.164, Exercise 2.2.5. Ad is an action of G on $U(g)$, so “Ad : $G \rightarrow U(g)$ ” should be “Ad : $G \rightarrow \text{End}(U(g))$.”
- p.165, line 5 of Section 2.3. “Self-adjointed” should be “self-adjoint.”
- p.167, first displayed formula. The right hand side should be “ $\overline{\langle Tx, x \rangle}$.”
- p.167, lines –9 and –8. The parenthetical remark is redundant.
- p.168, Eq. (3.3). The integral should be over $X \times X$.
- p.169, line 6. Not really a mistake, but one also needs to show that T_N is bounded.
- p.170, line 2. f should be $|f|$.
- p.170, line –13. “Upper bounded” should be “upper bound.”
- p.170, line –12 is redundant.
- p.170, line –5. Don’t overline the comma.
- p.170, Proposition 2.3.1(iii). After the backslashes insert G (twice).
- p.171, line 8. In the inequality, the L^2 -norms should be raised to the power $1/2$.

p.171, last displayed formula. The second term in the inner product on the right-hand-side should be " $\pi(g^{-1})w$."

p.171, line -9. In the change of variables, " \rightarrow " should be " \mapsto ".

p.172, line 1. $\theta(g\kappa_\theta)$ should be $\phi(g\kappa_\theta)$. As well, immediately afterwards, the term $e^{ik\theta}$ should be $e^{-ik\theta}$.

p.173, lines 2 and 3. It is not true in general that $\phi(g) = \phi(g^{-1})$, but it is still true that $\phi(g) = \overline{\phi(g^{-1})}$.

p.173, line 3. Don't overline the comma.

p.173, line 5. "Of the fom" should be "of the form."

p.173, Proposition 2.3.2. $e^{2\pi ik\theta} f$ should be $e^{ik\theta} f$.

p.173, line -6. Remove "as in (i)."

p.174, line 21. "eigenspace" should be " λ -eigenspace."

p.174, line -2. k should be any integer.

p.174, line -1. To be consistent with the rest of the text, $e^{-ik\theta}$ should be $e^{-ik\theta}$.

p.175, Theorem 2.3.4. Replace π with ρ throughout the statement and proof.

p.175, lines 13-14. When the spectral theorem is used, the logic is slightly out of order. Since λ is nonzero, the finite-dimensionality of the eigenspace then follows from the spectral theorem.

p.175, line 14. The λ -eigenspace of $\xi(\phi)$ doesn't make sense, so replace not of " $\xi(\phi)$ " with " $\rho(\phi)$."

p.175, line -9. " f_i is the..." should be " f_i is in the..."

p.176, Eq. (3.9). $>$ should be \geq .

p.176, line -10. λ_i^2 should be λ_i^{-2} .

p.176, line -8. "Self-adjointed" should be "self-adjoint."

p.177, line 6. Remove the period after " ∞ ."

p.177, line -10. "the domain of X " should be "the domain of L ".

p.177, Eq. (3.16). Don't overline the period.

p.179, line 9. "in (ii)" should be "in (iii)."

p.181, Eq. (3.26). The ζ in the denominator should be overlined.

p.183, line 8. " F is \mathcal{D} " should be " F in \mathcal{D} ."

p.184, Proposition 2.3.5. “defined an analytic” should be “defined and analytic.”

p.184, line –10. “Member of γ ” should be “number of γ .”

p.184, line –1. “Lemma” should be capitalized.

p.185, line 1. Omit the reference to Theorem 3.6 (which does not exist).

p.185, Theorem 2.3.5(i). $\sum \lambda_i^2$ should be $\sum \lambda_i^{-2}$.

p.185, line 7. “Exercise 3.2” should be “Exercise 2.3.2.”

p.185, last displayed formula. Replace both z ’s with $\gamma(z)$.

p.186, line 4. “with in” should be “within.”

p.187, line 9. “ $G \mapsto G/KZ^+$ ” should be “ $G \rightarrow G/KZ^+$.”

p.188, line 5. The function $\pi(g) \cdot Xf$ is automatically continuous, so this does not need to be assumed.

p.188, line 9. The sentence here is misplaced. It refers to Proposition 2.4.1 and should therefore be placed after the proof of Lemma 2.4.2. As well, the reference in it to Proposition 2.3.3 should be instead to Proposition 2.2.2.

p.188, second displayed formula. In the last line, the second to last parenthesis should be placed after “ $-f$ ” (because “ $\frac{1}{t}$ ” should multiply both terms).

p.188, line 14. The words “and is continuous” can be removed since π is continuous on G automatically, as was pointed out in the error on line 5 of this page.

p.190, line 12. Again, the statement about continuity can be removed since the representation is assumed to be continuous.

p.193, line –15. “Or else that $GL(n, \mathbb{R})^+$ ” should be “or else that $G = GL(n, \mathbb{R})^+$.”

p.194, line 14. Not really an error, but maybe it should be emphasized that the hypothesis that $\pi(\phi)$ is compact must hold for all ϕ , not just one ϕ .

p.194, line –2. “ v_0 ” should be “ v .”

p.195, line 1. “ $g \mapsto \kappa_1 g^{-1} \kappa_2$ ” should be “ $g \mapsto \kappa_2 g^{-1} \kappa_1$.”

p.195, first displayed formula. Replace “ $\phi_0(g)$ ” by its complex conjugate. (Eqs. (4.9) and (4.10) are still okay if this replacement is made.)

p.195, lines 17 and 19. “ $C^\infty(K \backslash G/K)$ ” should be “ $C_c^\infty(K \backslash G/K)$.”

p.197, Proposition 2.4.4. The implication (iii) \Rightarrow (ii) is incorrect. For instance, if $n = 2$, then (iii) always holds since the Lie algebra of $SO(2)$ is one-dimensional. To remedy this situation, replace “ \mathfrak{k} ” with “ $U(\mathfrak{k})$ ”. Then the argument in (ii) \Rightarrow (iii) can be iterated to show the correct statement, while the argument in (iii) \Rightarrow (ii) may remain unchanged, except for

the following error in referencing: The reference to Exercise 2.4.3 on line -12 should be to Exercise 2.4.2, and the reference to Exercise 2.4.2 on line -10 should be to Exercise 2.2.6.

p.197. Proposition 2.4.4 needs the additional hypothesis that f is a smooth vector (otherwise (iii) does not make sense).

p.198, line 9. $|\phi(g)| < \epsilon$ should read $\int_{G-U} |\phi(g)| dg < \epsilon$.

p.199, line 12. “ $H(\sigma)$ ” should be “ $\mathfrak{H}(\sigma)$.”

p.199, line 16. “ $H(\tau)$ ” should be “ $\mathfrak{H}_0(\tau)$.”

p.199, the last paragraph of the proof of Proposition 2.4.5 is wrong because of the error in Proposition 2.4.4(iii). Here is a new proof: Let f be a K -finite vector. The space R spanned by $X(\pi(\kappa)f)$ for $X \in \mathfrak{g}$ and $\kappa \in K$ is obviously finite-dimensional. But $\pi(\kappa)(Xf) = (\text{Ad}(\kappa)X)(\pi(\kappa)f)$ lies in R for any $\kappa \in K$, hence we are done by Proposition 2.4.4(ii).

p.199, lines -11 and -10. It doesn't really matter because this paragraph is incorrect, but “because is stable under \mathfrak{k} containing X ” should be “which is stable under \mathfrak{k} containing f .”

p.199, line -5. It doesn't really matter because this paragraph is incorrect, “Proposition 2.4.5” should be “Proposition 2.4.4.”

p.199, line -3. “Let $GL(n, \mathbb{R})$ ” should be “Let $G = GL(n, \mathbb{R})$.”

p.199, line -2. “let $g \in \mathfrak{g}$ ” should be “let $g \in G$ ”.

p.201, Exercise 2.4.1. Theorem 2.4.2 should be Theorem 2.4.1 (Peter–Weyl theorem).

p.202, first displayed formula. The sum should be over n .

p.202, second displayed formula. Remove the period.

p.202, line -7. Λ should be a linear functional on V .

p.202, last displayed formula. Both instances of “ f ” should be “ v .”

p.203, second displayed formula. “ad” should be “Ad.”

p.204, line 5. “ K -isotypic” should be “ σ -isotypic.”

p.204, proof of Proposition 2.5.1. It is stated in the first sentence that D commutes with the action of K , and then this same fact is reproved at the end.

p.205, line 10. x should be nonzero.

p.206, Theorem 2.5.1. V needs to be an irreducible (\mathfrak{g}, K) -module.

p.207, line 16. “parity K ” should be “parity k .”

p.207, Theorem 2.5.2. One must also fix the eigenvalue μ of Z in order for the theorem to be true.

- p.209, line -7. “Exercise 1.3” should be “Exercise 2.1.3.”
- p.210, line 8. Just like the definition on p.188, the continuity assumption in the definition of smoothness is automatic.
- pp.210-211, in the proof of Lemma 2.5.1, all “ $2\pi in$ ” should be “ in ” in the Fourier expansions, and the rest of the computations in the proof should reflect this change.
- p.210, line -1. There are unnecessary spaces in $2\pi ina_n$.
- p.211, Eq. (5.16). n^N should be n^{-N} .
- p.213, line 17. In the definition of δ_G , d_R and d_L must be normalized so that $\delta_G(e) = 1$.
- p.213, Eq. (5.19). The denominator in the fraction under the square-root should be $\delta_G(h)$, instead of $\delta_G(g)$.
- p.215, line 4. “ \mathfrak{H}^0 ” should be “ \mathfrak{H}_0 .”
- p.215, line 12. This is not exactly Theorem 2.5.1, which needs irreducibility as a hypothesis. Rather, it’s just a direct consequence of Proposition 2.5.4.
- p.216, lines -5 and -4. The word “to” is missing in “It is useful to consider...”.
- p.217, line 2. “isomorphic to V ” should be “isomorphic to W .”
- p.217, line 19. Delete the word “admissible.”
- p.218, line -16. The equation defining χ_i should be $\chi_i(y) = \text{sgn}(y)^{\epsilon_i} |y|^{s_i}$.
- p.219, line -10. μ should be a complex number.
- p.220, line 11. “ (\mathfrak{g}, k) ” should be “ (\mathfrak{g}, K) .”
- p.220, line -4. The second $GL(2, \mathbb{R})$ should be $GL(2, \mathbb{R})^+$.
- p.221, line -16. “Preceding” is misspelled.
- p.221: line -1. “ (\mathfrak{g}, K) =module” should be “ (\mathfrak{g}, K) -module.”
- p. 221, Exercise 2.5.7. Not really a mistake, but this should add that if $r = 0$ or h , then the action is by zero (in particular this case must be singled out because ξ_{-1} and ξ_{h+1} are not defined).
- p.222, line 1. “kernel of V ” should be “kernel of Λ .”
- p.222, line 10. “Question” is misspelled.
- p.222, line -8. $\delta_G(p)$ should be $\delta_P(p)$, and the measures d_L and d_R should be scaled so that $\delta_P(e) = 1$.
- p.223, line 7. \mathbb{R}^\times should be $\mathbb{R}_{>0}$.

- p.223, line -14. The equation with the integral should integrate ϕ_0 over P , not over G .
- p.223, lines -11 and -10. Do not pick f in $C(P \setminus G, \delta)$, since this f is not used in the sequel, and immediately afterwards an f in $C_c(G)$ is chosen instead.
- p.224, line 6. “Less that” should be “less than.”
- p.225, line -11. $\mathfrak{H}(s_1, s_2, \epsilon)$ should be $H(s_1, s_2, \epsilon)$.
- p.226, second displayed formula. Y should be L .
- p.226, line 9. “Admissible” should be “infinitesimal.”
- p.230, line 8. The reference to Eq. (5.21) should instead be to Eq. (5.22).
- p.233, line 16. $GL(n, \mathbb{R})$ should be $GL(n, \mathbb{R})^+$.
- p.233, proof of Proposition 2.6.4. The notation “ n ” used for the degree of the representation π clashes with its use in “ $GL(n, \mathbb{R})^+$.”
- p.233, line -14. Proposition 2.6.4 should say “irreducible unitary representations” at the end.
- p.233, Proof of Proposition 2.6.4. This argument is incomplete, because π is *a priori* not necessarily closed. For instance, see <https://math.stackexchange.com/questions/954850/finite-dimensional-unitary-representations-of-sl-n-mathbbbr>.
- p.233, line -8. The reference to Theorem 2.6.3(ii) should instead be to Theorem 2.6.3(i).
- p.233, line -1. The “shift by $2r$ ” should be “shift by nr ”.
- p.234, line -13. “Section 1” should be “Section 2.1.”
- p.234, Eq (6.20). $\det(g)$ should be $\det(\gamma)$, and $\frac{az+d}{cz+d}$ should be $\frac{az+b}{cz+d}$.
- p.235: line 3. The reference to Proposition 2.1.6 should instead be to Proposition 2.1.8.
- p.236: fourth displayed formula. After the third “=” sign, w should be w_0 .
- p.237, line 7. The reference to Eq. (5.22) should instead be to Eq. (5.23).
- p.237, last displayed formula. The exponent should be $(l - k)/2$.
- p.239, line 11. The second V should be V' .
- p.240, line 6. Remove the colon after “ $GL(2, \mathbb{R})^+$ ” in the theorem title, since it is inconsistent with the other theorem titles in the book.
- p.240, Theorem 2.6.7(ii) must exclude the case where $\epsilon = 1$ and $\lambda = 1/4$.
- p.240, line -10. “Theorem 6.14” should be “Theorem 2.6.6.”
- p.242, line 8. “Eigenvector” should be “eigenvalue.”

p.242, lines 3 and 4 of (vi) of Theorem 2.7.1. “Representation” should be “subrepresentation.”

p.242, line -5. (ii) should be (iii). p.243, line 11. “ $D + (k)$ ” should be “ $\mathcal{D}^+(k)$.”

p.243, line 12. The reference to Proposition 2.1.6 should instead be to Proposition 2.1.8.

p.243, line 12. “Multiplicity” should be “dimension.”

p.243, lines 12-13. The word “the” is missing in “of the $\frac{k}{2}(1 - \frac{k}{2})$ -eigenspace.”

p.243, line 18. “ $\Gamma \backslash \mathcal{H}$ ” should be “ $\Gamma \backslash G$.”

p.243, line 19. The reference to Eq. (1.29) should be instead to Eq. (1.30).

p.243, line 22. “Exercise 1.7” should be “Exercise 2.1.7.”

p.243, lines 25-27. Complex conjugation actually interchanges $L^2(\Gamma \backslash \mathcal{H}, \chi, k)$ and $L^2(\Gamma \backslash \mathcal{H}, \chi^{-1}, -k)$, but this is not what we need because the character gets inverted.

p.243, Eq. (8.1). The symbol ψ was never declared to be a nontrivial additive character.

p.245, near bottom. Replace X by D in this discussion, and note that $\pi(D)f$ is defined by (4.1) when $D = X$ is in the Lie algebra \mathfrak{g} , and extended to $U(\mathfrak{g})$ by Proposition 2.2.3.

p.247, line 13. Remove the parenthesis after “1969.”

p.247, line -6. “Equality” should be “inequality.”

p.248, line 11. “ $H^i R^j L^j$ ” should be “ $H^i R^j L^k$.”

p.250, line -4. The integral should be over K , not G .

p.260, line -8. “Restriction χ ” should be “restriction of χ .”

p.261, line 7. “Non-Archimedean” should be “Archimedean.”

p.264, line -1. There is an integral sign and $d^x x$ around “ $\chi_\nu(x)|x|_\nu^s$ ”. p. p.267, line -6. The reference to Proposition 3.1.3(iii) should instead be to Proposition 3.1.4(iii).

p.270, Theorem 3.1.1. The poles of $L_S(s, \chi)$ should be at $s = -\lambda$ and $s = 1 - \lambda$ in the number field case, and similarly at $s = -\lambda + 2\pi i n / \log(q)$ and $s = 1 - \lambda + 2\pi i n / \log(q)$ in the function field case.

p.271, line 4. The references to Eqs. (1.13), (1.5) and (1.14) should instead be to Eqs. (1.14) and (1.17).

p.271, line 9. “Euler factor” should be plural

p.271, line 13. If v is real, then χ_v is of the form $|x|_\nu^\nu (x/|x|_v)^\epsilon$ for some purely imaginary constant ν and $\epsilon = 0$ or 1 .

p.274, lines 9-10. Again, if v is real, then χ_v is of the form $|x|_\nu^\nu (x/|x|_v)^\epsilon$ for some purely imaginary constant ν and $\epsilon = 0$ or 1 . The proof must be modified to reflect this.

p.274, Eq. (1.30). In the first fraction on the right-hand-side, both instances of χ_v should be replaced with χ_v^{-1} .

p.274, last displayed formula. Again, both instances of χ_v should be replaced with χ_v^{-1} .

p.275, line -12. “Which we’ve already studied, times...” (comma added.)

p.275, line -10. The reference to Proposition 4.1.8 should be instead to Proposition 3.1.9.

p.275, Theorem 3.1.2. Again, the poles are wrong. See the correction to Theorem 3.1.1 on p.270 above.

p.276, line 11. “ $\zeta_v(s, \Phi_v, \chi_v)$ ” should be “ $\zeta(s, \Phi, \chi)$.”

p.277, Exercise 3.1.3. ψ should be nontrivial.

p.279, line 4. -1 should be $-I$.

p.279, line -5. The words “ \mathcal{Z} -finite” are missing: “ F is \mathcal{Z} -finite if...”.

p.280, line 11. “ $\mathcal{A}(\Gamma, \chi, k)$ ” should be “ $\mathcal{A}(\Gamma \backslash G, \chi, k)$.”

p.280, lines 18-20. This is not quite right, since the condition that $\chi(\tau_r) \neq 1$ might change if r is replaced by a multiple. But the conclusion drawn here is still okay.

p.280, line -11. “ $\mathcal{A}(\Gamma, \chi, k)$ ” should be “ $\mathcal{A}(\Gamma \backslash G, \chi, k)$.”

p.281, line 7. “Coset $Z(\mathbb{R})f$ ” should maybe read “coset of $Z(\mathbb{R})$,” since the symbol f is already used for a function, not an element of G .

p.281, lines 7-8. The statement made here about the minimal value of the height on a coset of $Z(\mathbb{R})$ is false.

p.281, line 10. “ $SL(2, R)$ ” should be “ $SL(2, \mathbb{R})$.”

p.281, Line -7. The reference to Eq. (2.1) should be instead to Eq. (2.8).

p.282, Eq. (2.9). The left-hand-side should be $(f|_k g)(z)$.

p.282, second displayed formula. The $iky(\frac{\partial}{\partial x})$ term in this equation should be $iky(\frac{\partial}{\partial z})$ (see the corresponding error on p.130).

p.283, Eq. (2.15). $e^{2\pi ik}$ should be $e^{ik\theta}$.

p.285, line 8. The reference to Proposition 4.2.2(i) should instead be to Proposition 3.2.2(i).

p.285, third displayed formula. The integral should be over $\Gamma Z(\mathbb{R}) \backslash G$. In the line after the formula, it should be noted that this is well defined because both ω and χ are unitary.

p.286, Eq. (2.23). ϕ_ω should just be ϕ .

p.288, second displayed equation. $\hat{\Phi}_{g,h}(yn)$ should be $\hat{\Phi}_{g,h}(n)$.

- p.288, line 12. G_d should be G_d^∞ .
- p.288, line -5. The reference to Proposition 4.2.1 should instead be to Proposition 3.2.1.
- p.289, third line of the proof of Theorem 3.2.2. The reference to Proposition 3.2.4 should instead be to Proposition 3.2.3.
- p.289, fourth line of the proof of Theorem 3.2.2. The reference to Exercise 3.1.5 should instead be to Exercise 2.1.5.
- pp.289-290. All the Γ 's in the notations for spaces of automorphic forms should instead be $\Gamma \backslash G$.
- p.290, line 2. The second $\mathcal{A}(\Gamma, \chi, \omega, \lambda)$ should be $\mathcal{A}(\Gamma \backslash G, \chi, \omega)$.
- p.290, line 3. $\mathcal{A}(\Gamma, \chi, \omega, \lambda, \rho)$ should be $\mathcal{A}(\Gamma \backslash G, \chi, \omega, \lambda)$.
- p.290. All ρ 's should be changed to σ .
- p.291, line 16. $L^2(\Gamma \backslash G, \chi, \omega)$ should be $L_0^2(\Gamma \backslash G, \chi, \omega)$.
- p.291, lines -3 and -2. "Section 3.5" should be "Section 3.6."
- p.293, line 6. "Of" should not be repeated.
- p.293, line -10. " $a_v = 1$ " should be " $a_v = 0$."
- p.293, line -7. "1 at every finite place" should be "0 at every finite place."
- p.293, line -1. "A open" should be "an open."
- p.294, line -6. " p -adic" should be " p_v -adic."
- p.298, line -2. Both instances of $B(\mathbb{R})$ should instead be $B(A)$.
- p.299, proof of Theorem 3.3.2. Theorem 2.3.7 should be 2.3.3.
- p.299, line -2. A_f should be $GL(n, A_f)$.
- p.300, line 2. The reference to Proposition 2.2.2 should instead be to Proposition 2.4.5.
- p.300, line 4. "Four" should be " n^2 ."
- p.300, line 5. Remove the parenthesis after " $XY - YX$."
- p.300, line 16. It is not always true that $\|g_v\|_v \geq 1$ for Archimedean v .
- p.300, line 18. "*Slowly increasing*" should be "*of moderate growth*."
- p.301, line 2. The reference to Exercise 4.3.2 should instead be to Exercise 4.3.1.
- p.301, line 15. " $x_v^\circ \cong y_v^\circ$ " should be " $x_v^\circ = y_v^\circ$."
- p.301, last displayed formula. The left-hand-side should read " $(\otimes_v \rho_v)(g_v)(\otimes_v \xi_v)$."

- p.301, line -3. “With respect to the V_v ” should be “with respect to the ξ_v^0 .”
- p.301, line -2. The reference to Exercise 3.1.1(c) should instead be to Exercise 3.1.1(a).
- p.302, line 10. “Isomorphic to K ” should be “isomorphic to V_ρ .”
- p.302, line 11. “ (V, π) ” should be “ (π, V) .”
- p.302, line -7. \mathfrak{g}_∞ should be \mathfrak{g}_v .
- p.302, line -4. “ (V, π) ” should be “ (π, V) .”
- p.302, line -2. \mathfrak{g}_∞ should be \mathfrak{g}_v .
- p.303, line 9. Theorem 3.2.1 should be Theorem 3.2.3.
- p.303, line 11. “Isotypic” should be “ ρ -isotypic.”
- p.303, line 17. Theorem 3.2.1 should be Theorem 3.2.3.
- p.303, line 13. $GL(2, \mathbb{R})^+$ should be K_v .
- p.305, line -12. $GL(n, F)$ should be $GL(n, A)$.
- p.305, line -9. χ^2 should be χ^n .
- p.305, line -8. $GL(2, A)$ should be $GL(n, A)$.
- p.307, line 14. “In our discussion of” should not be repeated.
- p.307, line 15. The word “a” is missing in “to a reductive Lie group.”
- p.308, lines 19 and 20. “ ϕ ” should be “ λ .”
- p.309, line 7 (counting the tombstone.) “ \mathcal{H} ” should be “ H .”
- p.309, line 20 (counting the tombstone.) “ $H(e)$ -module” should be “ $H[e]$ -module.”
- p.310, lines -8 and -7. Amend this to read: “We will call \mathcal{H}_G the Hecke algebra of G .”
- p.311, line 2. “Denote $\mathcal{E}'(G)$ ” should be “denoted $\mathcal{E}'(G)$.”
- p.311, line 2. “Denoted the pairing” should be “denote the pairing.”
- p.311, first displayed formula. e^{tX} should be $\exp(tX)$.
- p.312, line 3. Amend this to read “According to the notes in Knapp and Vogan, Flath had originally ...”
- p.314, line 6 overflows into the margin.
- p.314, line -7. Insert a space between the two sentences.
- p.316, line 13. “If \mathcal{H}_G ” should be “over \mathcal{H}_G .”

p.317, line 11. Exercise 3.4.4 should be Exercise 3.4.5.

p.317, line 14. The hat on the M should be wider.

p.317, line -9. “Theorem IV.6.6” should read “Theorem 4.6.3.” Any theorem or proposition with a roman numeral should be suspected of being wrong. Let me know if you find any others!

p.317, line -8. \widehat{M}° should be \hat{m}° .

p.321, Exercise 3.4.5. Ω has to be algebraically closed. Indeed, for a counterexample when Ω is not algebraically closed, take R to be a finite field extension of Ω , and $M = R$.

p.321, Theorem 3.5.1. The functional is of course only unique up to constant multiple.

p.322, statement of Theorem 3.5.2. Add the assumption that (π, V) is admissible.

p.323, line 1. “Theorem 5.1” should be “Theorem 3.5.1.”

p.325, last line. ψ_v should be ψ and \mathfrak{o}_v should be \mathfrak{o} .

p.325, last line. Proposition 4.5.7 should be Theorem 4.6.4.

p.326, line 3. W° should be W_ξ .

p.326, line 3. (5.30) should be (6.30).

p.327, line 19. Theorem 2.8.2 should be Theorem 2.8.1, and there is no mention of the complex version of this theorem here.

p.327, last line. Theorem 5.9.2 should be Theorem 2.9.2.

p.328, line -8. $\Omega_{w,\xi}$ should be Ω_{w,ξ_w} .

p.329, line -10. $GL(2, F)$ should be $GL(2, A)$.

p.330, lines -8 and -7. Theorem 3.3.7 should be Theorem 3.3.6.

p.332, line -5. “ $\alpha_2 = \chi_1(\varpi)$ ” should be “ $\alpha_2 = \chi_2(\varpi)$ ”

p.336, line 20. Theorem 3.7.5 should be Theorem 4.7.2.

p.336, line 26. Theorem 4.6.1 should be Theorem 4.6.7.

p.337, Eq. (5.34) should end with a period.

p.337, Following Eq (5.35), Proposition 4.6.5 should be Theorem 4.6.5.

p.340, line 10. “ $W_v(1)$ for $v \notin S$ ” should be “ $W_v(1) = 1$ for $v \notin S$ ”

p.341, In Eqs. (5.50), (5.52), (5.53), All L ’s should be L_v .

p.341, line -4. (V, π) should be (π, V) .

p.342, line 5. The reference to Eq. (1.39) should instead be to Eq. (1.29).

p.345, first displayed formula. ξ_{i+1} should be ξ_{p+1} .

p.346, line 2. Theorem 3.3.7 should be Theorem 3.3.6.

p.346, second line of first displayed formula. The right hand side of the equality should be " $\omega(z)f(g)$."

p.351, last line. $|f(k_v g_v)|$ should be $|f_v(k_v g_v)|$.

p.355, Eq. (7.22). The g on the right hand side should be g_v .

p.355, lines 3 and -11. The exponent of $|x|$ should be ν , not v .

p.355, last line. "Gelbart" is misspelled.

p.356, line 14. The exponent of $|y|$ should be ν , not v .

p.360, lines -5 and -4 and the formula in between. The formula here does not follow from Eq. (7.36), but rather from direct computation. Moreover, the sentence in line -5 and the formula is fragmented and should be joined with the sentence starting in line -4.

p.364, line -6. (7.40) should be (7.39).

p.367, fifth displayed formula. The $f_v(g_v)$ term in the brackets should be $\tilde{f}_v(g_v)$.

p.372, lines -5 and -2. (8.10) should be (8.11).

p.373, line 6. (8.13) should be (8.14).

p.374, lines -3 and -2. Ad should be Ad° .

p.375, line 6. "Metaplectid" should be "metaplectic."

p.375, line 18. Proposition 4.1.9 should be Proposition 3.1.9.

p.375, line -10. After "Jacquet and Langlands" there should be no apostrophe, and "(1970)" should be inserted.

p.376, lines -10 and -9. "Split its" should be "split over its."

p.378, line -2. p_α should be p_ϕ .

p.379, table. In the third (L-group) column, n should be $n + 1$ for the first three entries.

p.380, line -9. "Section IV.6" should be "Section 4.6" and "(IV.6.1)" should be "Eq. (6.1) of chapter 4."

p.382, line -9. \mathbb{C} should be $GL(m, \mathbb{C})$.

p.383, line 21. " $\hat{\pi}$ is the Langlands L-function" should read " $L(s, \hat{\pi})$ is the Langlands L-function."

p.383, lines -4 and -3. $GL(2)$ should be $GL(n)$ (twice) and $GL(8)$ should be $GL(n^2 - 1)$ (three times).

p.385, line -3. (π_1, V_0) should be (π_1, V_1) .

p.390, lines 15 and 16. (π_2, V_2) and (π_3, V_3) should be (π_1, V_1) and (π_2, V_2) , respectively.

p.390, line -4. "Four space" should be "three space."

p.391, fifth displayed formula. The second integral should be over $Z(A)N(A)G^1(F)\backslash G(A)$, where

$$N(A) = \left\{ \left(1, \begin{pmatrix} 1 & x_2 \\ & 1 \end{pmatrix} \right) \in G \mid x_2 \in A \right\}.$$

Also, the first integral should be taken against the measure dx_2 .

p.392, last two displayed formulas. e should be ψ .

p.394, last displayed formula. The second Whittaker function on the second line should be $W_{\pi_1, v}$, not $W_{\pi_2, v}$.

p.399, line 14. "Exercise 1.3" should be "Exercise 4.1.3."

p.400, second to last displayed formula. π should be π_1 .

p.401, line -11. The subscript "a" for the torus should be smaller.

p.402, last line. The subscript C on the Hom space should be \mathbb{C} .

p.404, first displayed formula: $GL(n, F)$ should be $GL(2, F)$

p.407, line 13: second Φ should be $\overline{\Phi}$

p.407, statement of Proposition 4.1.3. $\text{End}(W)$ should be $GL(W)$.

p.409, line -5. $\chi_2(x_1)$ should be $\chi_2(x_2)$.

p.410, line 10: ℓ should be π

p.412, line 1 of proof of Proposition 4.1.7: remove "irreducible"

p.416, line 16. "To show \overline{A} is isotropic" should be "to show \overline{A} is polarizing."

p.417, second displayed formula. Each arrow should be a \rightarrow , rather than a \mapsto .

p.418, line 5. $GL(n, C)$ should be $GL(n, \mathbb{C})$.

pp.419-421. \mathcal{V} should be replaced with V in the following places: Eq. (1.32); Eq. (1.34) (twice); second displayed formula on p.420; line -3 on p.420; and line 5 on p.421.

p.423, line 4. Exercise 4.1.18 should be Exercise 4.1.17.

p.423: line 8 of Exercise 4.1.18: S_{λ_i} should be W_{λ_i}

p.423, last displayed formula. \mathfrak{p}_μ should be p_μ .

p.423, line -2. "Exercise 4.18" should be "Exercise 4.1.18."

- p.426, line 1. Put a period after the parenthetical remark.
- p.426, Eq. (2.2). Omit parentheses from $d_L(b)$; similarly, omit parenthesis from $d_L(g)$ in the following displayed formula.
- p.427, line –8. “If π is not smooth” should read “if π is not admissible.”
- p.429, third displayed formula. $\text{vol}(K_0)$ should not be reciprocated.
- p.429, line –16. “Basis U_0 ” should be “basis of U_0 ”.
- p.432, line 3. f should be ϕ .
- p.432. Not a correction, but it is useful to know that a stronger result than Proposition 4.2.7 is true. If there exists a single open subgroup K such that V_1^K and V_2^K are nonzero (hence simple \mathcal{H}_K modules by Proposition 4.2.3), and if these are isomorphic as \mathcal{H}_K modules, then V_1 and V_2 are isomorphic. To prove this, adapt the proof of Theorem 4.6.3 on p.493.
- p.432, line –14. “Ring homomorphism” should be “ \mathcal{H}_{K_∞} -module homomorphism.”
- p.432, line –6. “What goes before” should read “the argument above.”
- p.433, line –16. “Homomorphism” should be “homeomorphism.”
- p.434, line 1. Theorem 4.22 should be Theorem 4.2.2, and similarly Theorem 4.23 should be Theorem 4.2.3.
- p.435, line 14. The subscript “a” on the Haar measure is too big.
- p.436, second sentence of Section 4.3. “This result” should be “these topics.”
- p.436, line 18, “Be the space of...” should read “is the space of...”
- p.437, line 3 of Proposition 4.3.2: should not have (-1) above ξ
- p.437, line –11. Exercise 3.1.1(c) should be Exercise 3.1.1(a).
- p.437, line –7. Proposition 4.5.1 should be Proposition 4.2.1.
- p.440, line 11. “ $C_c(G/H)$ ” should be “ G/H .”
- p.443, line 4. “ $f \in \mathcal{F}'(\mathcal{U})$ ” should be “ $f' \in \mathcal{F}'(\mathcal{U})$.”
- p.444, line 23. “ $s : U \rightarrow X$ ” should be “ $s : U \rightarrow \widehat{\mathcal{F}}$.”
- p.445, line 14. “Exercise 4,3.4(a)” should be “Exercise 4.3.4(a)” (comma replaced).
- p.445, line 19, “Extend the action of $C^\infty(X)$ ” should be “extend the action of $C_c^\infty(X)$.”
- p.446, line 1. Remove “set” in “ \mathcal{M} set is a sheaf.”
- p.447, line 8. $1_V \cdot f$ should be $1_V \cdot m$.
- p.447, lines 9, 10 and 12. $M(U)$ should be $\mathcal{M}(U)$.

p.449, line 20. The right hand side of the equation at the end of the line should just be $-D$.

p.449, line -5 should read “is zero.”

p.450, line 8. The definition of p should be $p(g) = (\text{tr}(g), \det(g))$.

p.450, line 13. “ $H \in GL(2, F)$ ” should be “ $H \subseteq GL(2, F)$.”

p.452, line -17. Proposition 4.3.6 should be Proposition 4.3.9.

p.452, line -14. Proposition 4.3.9 should be Proposition 4.3.12.

p.452, line -12. \mathfrak{F}_0 should be \mathfrak{F}_c .

p.452, line -10. Proposition 4.3.9 should be Proposition 4.3.12.

p.454, line 1, “of $G GL(n, F)$ ” should read “of G on $GL(n, F)$.”

p.454, line -6. The second instance of Eq. (4.3) should instead be Eq. (4.5).

p.454, last displayed formula: $D(f)$ should be $\Delta(f)$ and $\psi_N(u_1)$ should be $\psi_N^{-1}(u_1)$.

p.456, line -6 should not end with a tombstone, since the proof is not done at this point.

p.458, line -3. End should be GL .

p.459, line 1. x should be v (twice).

p.459, line 9. w should be v .

p.464, line 9. “More degenerate one...” should read “more degenerate than one...”

p.465, line 5. Theorem 4.4.3 should be Proposition 4.4.6.

p.465, line 5. “ $S(V)$ ” should be “ $\mathcal{S}(V)$.”

p.465, line 7. Proposition 4.7 should be Proposition 4.4.4.

p.465: line -2. “Nonzero” should be improved to “injective.”

p.469, line 7. U should be \bar{U} .

p.470, line 15. $G \setminus H$ should be $H \setminus G$. p.475, line 14. “ $\rho : GL(2, F) \rightarrow \mathbb{C}$ ” should be “ $\rho_0 : GL(2, F) \rightarrow \mathbb{C}^\times$.”

p.479, line -15. $F(g)$ should be $f(g)$.

p.479, line -7. “Isomorphic” should be “irreducible.”

p.482, In the paragraph “We may summarize...”, strictly speaking, Exercise 4.5.4 is also necessary to deduce the statements given here.

p.482, line -14. Section 4.7 should be Section 4.8.

p.484, line 8. Proposition 5.1 should be Proposition 4.5.1.

p.485, line 9. “Whittaker function” should read “Whittaker functional.”

p.486, last displayed formula and p.487, top displayed formula. The domain of integration should be \mathfrak{p}^{-N} .

p.487, line 2. Exercise 3.1.10 should be Exercise 3.1.9.

p.488, first displayed formula. The definition of L_2 is slightly wrong. The second term $\phi(1)$ should be multiplied by a function $h(x)$ designed to make the statement that the integral is compactly supported actually true! For example, we can take:

$$h(x) = \begin{cases} |x|^{-1}(\chi_1^{-1}\chi_2)(x) & \text{if } |x| > 1, \\ 0 & \text{if } |x| \leq 1. \end{cases}$$

p.492, line -13. “Vector space over R ” should read “vector space over k .”

p.493, line 3. $L_2(i \cdot 0)$ should be $L_2(u \cdot 0)$.

p.493, Theorem 4.6.3. Not a correction, but note that this is a special case of the generalization of Proposition 4.2.7 described above on the note to p.432.

p.494, line -6. $\text{Mat}_r(\mathfrak{o})$ should be $\text{Mat}_2(\mathfrak{o})$.

p.495, first and third displayed formulas. “ $1 \leq r \leq k + 1$ ” should be “ $1 \leq r \leq k$.”

p.495, line 10. $n - m - 1$ should be $n - m - 2$.

p.496, second line of second displayed formula. ϕ should be ϕ_K .

p.503, Eq. (6.21). ϕ_1 should be c_1 .

p.503, fourth displayed formula. The a_k on the right hand side should be a_m .

p.508, line -11. “Up to isomorphism” should be “up to scalar.”

p.512, line 1. 5.4 should be 4.4.

p.512, line 18. “Characters” should be “quasicharacters.”

p.513, third displayed formula. In the integral, dy should be dx .

p.514, line 4. “Characters” should be “quasicharacters.”

p.514, line 15. $u \leq \epsilon$ should be $|u| \leq \epsilon$.

p.514, Eqs. (7.3) and (7.4). $t^{1/2}$ should be $|t|^{1/2}$ (four times).

p.516, Eq. (7.7). $t^{1/2}$ should be $|t|^{1/2}$.

p.516, line -8. “Linearly independent” should be “linearly dependent.”

p.518, line 2. $\phi(a)$ should equal $W(\binom{a}{1})$.

p.520, line 14. In the equation on this line, ϕ should be Φ .

p.520, line -11. $a \in F$ should be $a \in F^\times$.

p.521, Eq. (7.18). The second argument of B_0 should be $\pi_2(b)v_2$.

p.527, above Lemma 4.8.1. Omit the tombstone because the proof does not end here.

p.532, line -4. The whole left hand side of the equation on this line should be overlined.

p.540, line 17. Amend this to read “After partial results towards Howe’s conjecture were obtained by Howe and other authors, the conjecture was fully proved for local fields of odd residue characteristic by Waldspurger (1990).”

p.541, Theorem 4.8.6. Since it is assumed here that E is a field, delete all references to the case $E = F + F$ in the statement and proof of this theorem! The case where $E = F + F$ is considered separately, later.

p.546, line 4. Eq (5.65) should be Eq. (8.65).

p.548, line 5 should have an empty tombstone at the end instead of a filled one.

p.548, line 8 should have a filled tombstone at the end because this is where the proof of Proposition 4.8.9 ends.

p.550, line 15. “Reductive” is misspelled.

p.553, line -12. “Its consists” should be “its image consists.”