ERRATA FOR
AN INTRODUCTION TO AUTOMORPHIC REPRESENTATIONS

JAYCE R. GETZ AND HEEKYOUNG HAHN

Chapter 1

§1.10. The right hand side of the displayed equation in Proposition 1.10.7 should read

$$\{H(k^{\mathrm{sep}})g \in H(k^{\mathrm{sep}})\backslash G(k^{\mathrm{sep}}) : g\xi(g^{-1}) \in H(k^{\mathrm{sep}}) \text{ for all } \xi \in \mathrm{Gal}_k\}.$$

Pointed out by Bobby (Zixuan) Zhang.

Chapter 3

§3.2. After Theorem 3.2.3, $\frac{dg}{dh}$ should be $\frac{d_r g}{d_r h}$.

Chapter 4

§4.4. In the definition of a $(\mathfrak{g}, K)$-module on p. 115-116 one has to assume that all of the representations $K \to \mathrm{GL}(W)$ are continuous, where we give W the canonical topology. Pointed out by Yihang Zhu.

§4.7. In the definition of the $(\mathfrak{g}, K)$-module the generators H, X, Y must be replaced by appropriate Cayley transforms as in [Bum97, §2.5]. Pointed out by Andrea Bourque.

Chapter 8

§8.3. In the proof of Proposition 8.3.1, the map ev_1 is not $M(F)$-equivariant. It is only equivariant up to a twist by $\delta_P^{-1/2}$. Because of this twist, the map $\mathrm{ev}_1 \circ (\cdot)_N$ is equivariant as claimed. Pointed out by Marie-Hélène Tome. Alternate reference: [Lau96, Lemma D.3.3].

Chapter 12

§12.1. The definition of the topology on the Weil group of a local non-Archimedean field is incorrect. See [Tat79, (1.4.1)] for the correct topology. Pointed out by Jhan-Cyuan Syu.

Chapter 13

§13.4. Above (13.5), "left $\mathbb{C}$-linear action of $\mathrm{Gal}(E/F)$..." should be "left $\mathbb{C}$-linear action of Gal_F..."

§13.4. In Theorem 13.4.2, $\mathrm{GL}_n(\mathbb{A}_F)$ should be $\mathrm{GL}_n(\mathbb{A}_E)$. Pointed out by Ruichen Xu.

Chapter 17

§17.3. The standing assumption is that H is a smooth *affine* algebraic group. With the exception of §3.11, and Example 12.1 every group scheme in the book is assumed to be affine. Pointed out by Bobby (Zixuan) Zhang.

§17.4. The sentence after Lemma 17.4.1 should read "Taking $I = H_\gamma$, we see that the set of classes in the geometric class of γ is in bijection with $\mathcal{D}(k, H_\gamma, H)$." Pointed out by Bobby (Zixuan) Zhang.

Chapter 18

§18.6. In the last displayed equation on p. 491 f should be f_x. Pointed out by Bobby (Zixuan) Zhang.

Appendix A

§A.1. After the last displayed equation on p. 527, the sentence "Since we assumed the residual characteristic of k_0 is not 2..." should be changed to "Since we assumed the characteristic of k_0 is not 2..." Pointed out by Bobby (Zixuan) Zhang.

References

[Bum97] D. Bump. *Automorphic forms and representations*, volume 55 of *Cambridge Studies in Advanced Mathematics*. Cambridge University Press, Cambridge, 1997. 1

[Lau96] G. Laumon. *Cohomology of Drinfeld modular varieties. Part I*, volume 41 of *Cambridge Studies in Advanced Mathematics*. Cambridge University Press, Cambridge, 1996. Geometry, counting of points and local harmonic analysis. 1

[Tat79] J. T. Tate. Number theoretic background. In *Automorphic forms, representations and L-functions (Proc. Sympos. Pure Math., Oregon State Univ., Corvallis, Ore., 1977), Part 2*, Proc. Sympos. Pure Math., XXXIII, pages 3–26. Amer. Math. Soc., Providence, R.I., 1979. 1

Department of Mathematics, Duke University, Durham, NC 27708
Email address: jgetz@math.duke.edu

Department of Mathematics, Duke University, Durham, NC 27708
Email address: hahn@math.duke.edu