INTRODUCTION TO LIE GROUPS AND LIE ALGEBRAS - ERRATA

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Thanks to everyone who sent corrections – and first of all, to Binyamin Balsam. If you found a misprint not listed here, please send it to `kirillov@math.sunysb.edu`

Page	**Written**	**Should be**
p. 12, First paragraph of section 2.5, 3rd line	G_m	Gm
p. 15, Theorem 2.27, last word	spaces	fields
p. 18, Corollary 2.31	$\mathrm{Sp}(2n, \mathbb{K})$	$\mathrm{Sp}(n, \mathbb{K})$
p. 32, title of Section 3.4	Subalgebras, ideals, and center	Subalgebras and ideals
p. 36, Proof of theorem 3.29, line 6 (twice)	$exp(th)$	$exp(tx)$
p. 49, Exercise 3.9 (1)	$\mathrm{Aut}(G)$	$\mathrm{Aut}(\mathfrak{g})$
p. 60, Example 4.24	$Z(\mathrm{SO}(n, R)) = \{\pm 1\}$	$Z(\mathrm{SO}(n, R)) = \begin{cases} \{\pm 1\}, & n \text{ even}, n > 2 \\ \{1\}, & n \text{ odd} \end{cases}$
p. 63, Thm 4.34 (3)	The form ω is left-invariant only if G is connected. Otherwise, ω is left invariant up to a sign.	
p. 65, Proof of Theorem 4.40	$B(hv, hw) = B(v, w)$	$\tilde{B}(hv, hw) = \tilde{B}(v, w)$
p. 66, Theorem 4.41 (4 occurences)	$\rho^V_{ij}(g)$	ρ^V_{ij}
p. 66, Proof of Lemma 4.42, line 4	$(\mathrm{tr}(f)/\dim V)\,\mathrm{id}$	$\lambda = \mathrm{tr}(f)/\dim V$
p. 71, line 3	as was proved earlier	as will be proved later
p. 80, Exercise 4.6	cover map	covering map
p. 85, Example 5.3	$ef - ef = h$	$ef - fe = h$
p. 86, Example 5.6, last two lines of computation	$+$ sign should be added in front of $\frac{1}{2}h$	
p. 88, second displayed formula	mod $U_{p+q-1}\mathfrak{g}$	mod $U_{p+q}\mathfrak{g}$
p. 90, Lemma 5.17, last line	$\mathfrak{g}/\operatorname{Ker} f$	$\mathfrak{g}_1/\operatorname{Ker} f$
p. 122, line 6 (second dipslayed formula)	(α, μ)	(λ, μ)
p. 127, line 2	$\mathfrak{h} = C(\mathfrak{h})$	$\mathfrak{h} = C(h)$
p. 128, proof of Proposition 6.52, first line	...Lie group with Lie algebra G	...Lie group with Lie algebra $\mathfrak{g}$
p. 131, Exercise 6.7	delete "(see Exercise 6.7)"	
p. 135, Theorem 7.9, 4(a)	$n_{\alpha\beta} = 3$, $n_{\beta\alpha} = 1$	$n_{\alpha\beta} = -3$, $n_{\beta\alpha} = -1$
p. 135, Theorem 7.9, 4(b)	$n_{\alpha\beta} = -3$, $n_{\beta\alpha} = -1$	$n_{\alpha\beta} = 3$, $n_{\beta\alpha} = 1$
p. 138, Lemma 7.15	$\alpha, \beta \in R_+$ are simple,	$\alpha, \beta \in R_+$ are simple, $\alpha \neq \beta$,
p. 139, Lemma 7.17	Condition "$(v_i, t) > 0$ for some non-zero vector t" must be added	

Date: Last updated Sept 30, 2009.

Page	**Written**	**Should be**
p. 147, Example 7.32	all $\leq$ should be replaced by $<$	
p. 155, equations (7.30), (7.31)	add condition $i \neq j$	
p. 156, proof of Lemma 7.53, last paragraph	by (7.29), its weight...	by (7.28), its weight...
p. 161, Exercise 7.11	$A_1 \times A_1$	$A_1 \cup A_1$
p. 162 Exercise 7.17	$R = \{\pm e_i \pm e_i, i \neq j\}$	$R = \{\pm e_i \pm e_j, i \neq j\}$
p. 168, Theorem 8.14	$\lambda \in \mathfrak{h}_*$	$\lambda \in \mathfrak{h}^*$
p.170, Theorem 8.15,	all occurences of M_λ should be replaced by V	
p.171, 4th line from bottom	every finite-dimensional representation	every irreducible finite-dimensional representation
p.171, 3rd line from bottom	Theorem 8.15	Theorem 8.10
p. 181, Theorem 8.39	$\frac{q^{(\lambda+\rho,\alpha)} - q^{(\lambda+\rho,\alpha)}}{q^{(\rho,\alpha)} - q^{(\rho,\alpha)}}$	$\frac{q^{(\lambda+\rho,\alpha)} - q^{-(\lambda+\rho,\alpha)}}{q^{(\rho,\alpha)} - q^{-(\rho,\alpha)}}$
p. 181, proof of Theorem 8.39, last line	$\prod_{\alpha\in R_+}(q^{(\lambda+\rho,\alpha)} - q^{(\lambda+\rho,\alpha)})$	$\prod_{\alpha\in R_+}(q^{(\lambda+\rho,\alpha)} - q^{-(\lambda+\rho,\alpha)})$
p. 181, Theorem 8.40	$\alpha \in P_+$	$\lambda \in P_+$
p. 189, 4th line from the bottom	$HC(z)(\lambda)v_\lambda$	$HC(u)(\lambda)v_\lambda$
p. 190, formula (8.34) and p. 191, line 1	χ_z	χ
pp. 203, 206, 208	Dynkin diagrams for types A_n, C_n, D_n are incorrect. Correct diagrams can be found on p. 153.	