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## ADDENDUM

# Correction to 'Invariant volumes of compact groups'

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Abstract. In the previous paper by M S Marinov, the maximal torus was described wrongly, and some equalities contained a false factor. In fact, it is the maximal torus H of the universal covering group, that is an *r*-simplex (the Weyl alcove)

$$H:(\boldsymbol{\gamma}^{(j)}\boldsymbol{\varphi}) \ge 0, \qquad (\boldsymbol{\alpha}^{1}\boldsymbol{\varphi}) \le 2\pi.$$
(16)

The formulae, which appeared incorrectly in Marinov (1980) are:

$$V_0(H) = (2\pi)^r (\det(\gamma^{(j)}\gamma^{(k)}))^{-1/2} \left(r! \prod_{j=1}^r a_j\right)^{-1}$$
(17)

$$V_{\rm inv}(G) = \Lambda^{n/2} (2\pi)^{p+r} n(Z)^{1/2} / [\Pi(\gamma^2/2)]^{1/2} \Pi(\alpha \rho)$$
(19)

$$V_0(T)/V_0(H) = n(W)$$
 (22)

$$V_{\omega}(\mathrm{SO}(2r+1)_{A}) = 2^{r}(2\pi)^{r(r+1)} / \prod_{s=1}^{r-1} (2s+1)!$$
(27)

$$V_{\omega}(\mathrm{SO}(2r)_A) = 2^{r-2} (2\pi)^{r^2} / \prod_{s=1}^{r-1} (2s)!$$

$$V_{\omega}(\mathrm{SO}(N+1)_{v})/V_{\omega}(\mathrm{SO}(N)_{v}) = V(S_{N})$$
(28)

$$V_{\xi}(\mathrm{SU}(N)) = 2^{(N-1)/2} \pi^{(N-1)(N+2)/2} N^{1/2} / \prod_{s=1}^{N-1} s!$$
(31)

$$V_{\xi}(\mathrm{SU}(N+1))/V_{\xi}(\mathrm{SU}(N)) = V(S_{2N+1})[(N+1)/2N]^{1/2}$$
(32)

$$\ln V_{\rm inv}(\mathrm{SU}(N)) = \frac{1}{2}(N^2 - 1)(\ln(4\pi) + \frac{3}{2}) + \frac{1}{12}\ln N + \frac{5}{12}\ln 2 - c + O(N^{-1}).$$
(33)

The discussion of the coset spaces should be revised accordingly. Now the volumes of the unitary groups are in agreement with Bernard (1979), and  $V_{\xi}(SU(3)) = \pi^5 \sqrt{3}$ . The results on the orthogonal groups do not contradict Gilmore (1974), provided that the vector rotation groups (not the universal covering spin groups) are in view.

I apologise for any time which may have been wasted as a result of this confusion. I am greatly indebted to Drs I Bernstein and A Vaynshteyn who prompted me to revise the work.

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