Corrections to "L_2-characteristic classes of Maslov–Trofimov of hamiltonian systems on the Lie algebra of the upper triangular matrices"

by

Jerzy B. N o w a k (Szczecin)

We rectify some errors in the above-mentioned paper.

In the Lemma on page 101 the diffeomorphisms ϕ_s should be assumed to be affine, and $f^*(a) \in H^*(N^n)$ should be replaced by $f^*(a) \in H^*(N^n/\{\phi_s\})$.

On page 107 the transformation of the integral which represents the L_2-norm of the form $\widetilde{\omega}$ is incorrect: in line 11 from the bottom,

$$\int_0^\infty \frac{4A^2x^4\,dx}{(A^2(x^4+1))^{5/2}} \quad \text{should read} \quad \int_0^\infty \frac{4A^2x^4\,dx}{(A^2(x^4A^{-2}+1))^{5/2}};$$

in line 6 from the bottom,

$$-\frac{1}{6}\frac{4}{|A|^{1/2}}\int_0^\infty d(x(x^4+1)^{-3/2}) \quad \text{should read} \quad -\frac{1}{6}\frac{4}{|A|^{1/2}}\int_0^\infty x\,d(x^4+1)^{-3/2};$$

and in line 1 from the bottom,

$$\frac{2}{3|A|^{1/2}}\int_0^\infty t^4(1+t^4)^{-1/2}\,dt \quad \text{should read} \quad \frac{1}{3|A|^{1/2}}\int_0^\infty (1+t^4)^{-1/2}\,dt.$$

The above mistakes cause that on page 108, the formula

$$\frac{\sqrt{2}-1}{3|A|^{1/2}}\int \frac{u^{-1}\,du}{((u^2+1)(u^2k^2+1))^{1/2}}$$

should be replaced by

$$\frac{2-\sqrt{2}}{3|A|^{1/2}}\int_{-b}^b \frac{du}{((u^2+1)(u^2k^2+1))^{1/2}} \quad \text{where} \quad b=\sqrt{k^{-1}},\ k=\frac{2-\sqrt{2}}{2+\sqrt{2}}.$$

Moreover, making the substitution $t^4 = z$ one can check that the initial integral has the form

$$\frac{1}{3|A|^{1/2}} \int_0^\infty (1 + t^4)^{-1/2} \, dt = \frac{1}{12|A|^{1/2}} \int_0^\infty (1 + z)^{-1/2} z^{-3/4} \, dz$$

$$= \frac{1}{12|A|^{1/2}} B(1/4, 1/4)$$

where B denotes the beta function.

Division of Applied Mathematics
Agricultural Academy of Szczecin
Monte Cassino 16
70-451 Szczecin 3, Poland
E-mail: nowak@euler.mat.univ.szczecin.pl