Краткие сообщения

Erratum to: Stability of equilibrium and periodic solutions of a delay equation modeling leukemia

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Key words: delay differential equations; stability; Hopf bifurcation; normal forms.

Unhappily, in our paper some errors are present. First, in Subsection 4.2, the common correct value for e_{11} and e_{22} is $e_{11} = e_{22} = 1 - e^{\mu r}$, that becomes zero only when $\mu = 0$. This does not affect the computations for the first Lyapunov coefficient, since this one is computed on the center manifold, where $\mu = 0$.

The second and more important error is contained in Subsection 4.4, where the second general relation that determines the functions w_{jk} should have been written as:

$$\frac{d}{dt} \sum_{j+k \geq 2} \frac{1}{j!k!} w_{jk}(0) u^j \overline{u}^k + \sum_{j+k \geq 2} \frac{1}{j!k!} g_{jk} u^j \overline{u}^k \varphi_1(0) + \sum_{j+k \geq 2} \frac{1}{j!k!} \overline{g}_{jk} \overline{u}^j u^k \varphi_2(0) =$$

$$= -(B_1 + \delta) \sum_{j+k \geq 2} \frac{1}{j!k!} w_{jk}(0) u^j \overline{u}^k + kB_1 \sum_{j+k \geq 2} \frac{1}{j!k!} w_{jk}(-r) u^j \overline{u}^k + \sum_{j+k \geq 2} \frac{1}{j!k!} f_{jk} u^j \overline{u}^k.$$

The determination of the functions w_{20} and w_{11} is, of course, affected by this error. The correct forms of the values in 0 and $-r$ of these two functions are:

$$w_{20}(0) = c \left[e^{2\omega^* ir} f_{20} + g_{20} \left(-\frac{kB_1 i}{\omega^*} + \frac{kB_1 i}{\omega^*} e^{i\omega^* r} - e^{2i\omega^* r} \right) + \right.$$

$$\left. + \overline{g}_{02} \left(-\frac{kB_1 i}{3\omega^*} + \frac{kB_1 i}{3\omega^*} e^{3i\omega^* r} - e^{2i\omega^* r} \right) \right],$$

$$w_{20}(-r) = c \left[f_{20} + g_{20}(1 - 2e^{\omega^* ir} - \frac{B_1 + \delta}{\omega^*} i(1 - e^{\omega^* ir})) - \right.$$

$$\left. - \frac{1}{3} \overline{g}_{02}(1 + 2e^{3\omega^* ir} + \frac{B_1 + \delta}{\omega^*} i(1 - e^{3\omega^* ir})) \right],$$

where $c = [-kB_1 + (B_1 + \delta)\cos(2\omega^* r) - 2\omega^* \sin(2\omega^* r) - i(2\omega^* \cos(2\omega^* r) + (B_1 + \delta)\sin(2\omega^* r))]/[(kB_1)^2 + (B_1 + \delta)^2 + (2\omega^*)^2 - 2kB_1(B_1 + \delta)\cos(2\omega^* r) + 4kB_1 \omega^* \sin(2\omega^* r)]$, and

$$w_{11}(0) = c_1 \left[f_{11} - g_{11} - \overline{g}_{11} + \frac{kB_1 i}{\omega^*} \left(g_{11}(1 - e^{-\omega^* ir}) - \overline{g}_{11}(1 - e^{\omega^* ir}) \right) \right],$$

$$w_{11}(-r) = c_1 \left[f_{11} - g_{11} - \overline{g}_{11} + \frac{(B_1 + \delta) i}{\omega^*} \left(g_{11}(1 - e^{-\omega^* ir}) - \overline{g}_{11}(1 - e^{\omega^* ir}) \right) \right],$$

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with $c_1 = 1/(B_1 + \delta - kB_1)$.

We posted the correct form of the paper on the web page http://arxiv.org, at http://arxiv.org/abs/1001.5354 .

We apologize to the readers of "Journal of Middle Volga Mathematical Society"for the confusion generated by our mistakes.

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