ANNALES
POLONICI MATHEMATICI
LVIII.1 (1993)

Corrections to "Bifurcation from a saddle connection in functional differential equations: An approach with inclination lemmas"

(Dissertationes Math. 291 (1990))

by HANS-OTTO WALTHER (München)

Page 21, line 16: Delete "and is continuous".
Include "Each map $X(t,\cdot,a): C \to C$ is of class C^1."

Page 31, line 10: Add a line:
"(vi) The maps DG, DG^-, D_1G, D_1G^- are bounded."

Page 32, lines 14 and 15: Delete "and are continuous".
Add "Each map $Y(t,\cdot,a), R(t,\cdot,a)$ is of class C^1."

Page 32, lines 24–26: Delete "The assignments ... into $L_c(C,C)$."

Page 33, lines 10–14: Replace these lines by the following text.

"PROPOSITION 5.! *There exists a constant const ≥ 0 such that we have*

$$|D_2R_{p_a}(t,\psi)| + |D_2R_{q_a}(t,\psi)| < const \quad \text{for all } (t,\psi,a) \in [0,N] \times D^1 \times A_7\,. \tag{5.6}$$

Proof. Let $(t,\psi,a) \in [0,N] \times D^1 \times A_7$ be given. We have

$$|D_2R(t,\psi,a)| \leq |D_2Y(t,\psi,a)| + |T(t,\cdot,a)|$$

and

$$\begin{aligned}|D_2Y(t,\psi,a)| &\leq \sup|D_1G||D_2X(t,G^-(\psi,a),a)|\sup|D^1G^-| \\ &\leq \sup|D_1G|\sup|D_1G^-|(1+\max|h'|)^{N+1}\,,\end{aligned}$$

by Proposition 5.1(vi) and Corollary 3.1. There is a constant $k_{00} \geq 1$ such that

$$|T(t,\cdot,a)| \leq k_{00}e^{-\lambda t} \quad \text{for all } t \geq 0\,, a \in A_7 \subset A_3\,.$$

Now the desired estimate becomes obvious. ∎

From Proposition 5.3(i) we infer that there exist an open ball $D^{2.1} \subset D^1$, centered at $0 \in C$, and an open interval A_8 (with $\mathrm{cl}\, A_8 \subset A_7$) such that we have"

(5.7) ...

Page 34, lines 25 and 27: Replace "c" by "$const$".

Page 34, line 28: Replace "$(1 + c + k_0)e^{-\lambda_1 N}$" by "$(1 + const + k_0)e^{-\lambda_1 N}$".

Page 35, lines 10 and 11: Write

$$\text{“}|p_a \circ Y_a(3, \psi)| \leq (const + 1)e^{3\mu_2}|p_a\psi|\text{”}.$$

Page 35, line 21: Write

$$\text{“}c_4 := \frac{c_3}{(const + 1)e^{3\mu_2}}\text{”}.$$

Page 36, lines 25 and 26: Replace "c" by "$const$".

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Reçu par la Rédaction le 12.11.1992