Erratum to: Metric regularity, fixed points and some associated problems of variational analysis

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(1) In the third line of the statement of Theorem 4.4, “ $\bar{x} \in U, \bar{y} \in V$ ” should read “ $x \in U, y \in V$ ”.

(2) There are two misprints in the statement of Theorem 4.8 (in formula (4.16) and the one before it). The statement of Theorem 4.8 should read as follows.

Theorem 4.8. *Let F and Φ be set-valued mappings from X into Y with closed graphs and the graph of one of them is complete. Let further $U \subset X$ and $V \subset Y$ be nonempty open sets. Set*

$$\gamma(x) = d(x, X \setminus U), \quad \delta(y) = d(y, Y \setminus V).$$

We assume that there are $\lambda > 0, \mu > 0$ such that $\lambda\mu < 1$ and

- (i) *F is γ -regular on (U, V) with $\text{sur}_\gamma F(U|V) > \lambda^{-1}$;*
- (ii) *Φ is δ -pseudo-Lipschitz on (U, V) with $\text{lip}_\delta \Phi(U|V) < \mu$.*

Set further for any $x \in U$,

$$V(x) = \{y \in V : d(y, \Phi(x)) < (1 - \lambda\mu) \min\{\lambda^{-1}d(x, X \setminus U), d(y, Y \setminus V)\}\}.$$

Then for any $x \in U$,

$$\begin{aligned} d(x, \text{Fix}(F^{-1} \circ \Phi)) &= d(x, \text{Coin}(F, \Phi)) \\ &\leq \frac{\lambda}{1 - \lambda\mu} d(F(x) \cap V(x), \Phi(x)) \end{aligned} \quad (4.16)$$

and for any $y \in F(x) \cap V(x)$,

$$d(y, \text{Fix}(\Phi \circ F^{-1})) \leq \frac{1}{1 - \lambda\mu} d(y, \Phi(x)). \quad (4.17)$$

In the published text $\max\{\lambda^{-1}, \mu\}$ appears in the definition of $V(x)$ and $d(y, \text{Coin}(F, \Phi))$ in (4.16). (The first is an obvious blunder as $\lambda\mu < 1$ by the assumption. I am tankful to A. Arutyunov who has brought my attention to it.)

(3) There is also one misprint in the second paragraph after the proof of Theorem 4.8. In the second term of the displayed formula just before Section 5, “ y ” should be replaced by “ x ”, so the formula should read

$$d(x, \text{Fix}(F^{-1} \circ \Phi)) = d(x, \text{Coin}(F, \Phi)) \leq \frac{\lambda}{1 - \lambda\mu} d(F(x), \Phi(x)).$$

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