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Corrigendum

Corrigendum to "Soft α-Open Sets and Soft α-Continuous Functions"

Metin Akdag,[1] Alkan Ozkan,[1] A. Ghareeb,[2] and A. K. Mousa[3]

[1]*Department of Mathematics, Science Faculty, Cumhuriyet University, Sivas, Turkey*
[2]*Department of Mathematics, Faculty of Science, South Valley University, Qena, Egypt*
[3]*Department of Mathematics, Faculty of Science, Al-Azhar University, Assiut, Egypt*

Correspondence should be addressed to Alkan Ozkan; alkan_mat@hotmail.com

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In the paper titled "Soft α-Open Sets and Soft α-Continuous Functions" [1, Example 14], the authors deduced that τ is a soft topology over $X = \{h_1, h_2, h_3, h_4\}$ with respect to $E = \{e_1, e_2, e_3\}$. In fact, their conclusion is not true. For example, the soft sets (F_1, E) and (F_2, E) are in the collection τ but their soft intersection and soft union do not belong to it. It follows that all examples based on Example 14 also are incorrect. The examples of [1] can be replaced by the following accurate examples.

Example 1. Let $X = \{h_1, h_2, h_3\}$, $E = \{e\}$, and $\tau = \{\widetilde{\emptyset}, \widetilde{X}, (F, E)\}$ is a soft topology over X with respect to E, where (F, E) is a soft set over X defined by $F(e) = \{h_1\}$. Then the soft set (G, E) defined by $G(e) = \{h_1, h_2\}$ is soft α-open set but not soft open set.

Example 2. Let $X = \{h_1, h_2, h_3\}$, $E = \{e\}$, and $\tau = \{\widetilde{\emptyset}, \widetilde{X}, (F_1, E), (F_2, E), (F_3, E)\}$ is a soft topology over X with respect to E, where $(F_1, E), (F_2, E)$, and (F_3, E) are soft sets over X defined as follows:

$$\begin{aligned} F_1(e) &= \{h_1\}, \\ F_2(e) &= \{h_2\}, \\ F_3(e) &= \{h_1, h_2\}. \end{aligned} \tag{1}$$

Then the soft set (G, E) defined by $G(e) = \{h_1, h_3\}$ is soft semiopen set but not soft α-open set.

Example 3. Let $X = \{h_1, h_2, h_3\}$, $E = \{e_1, e_2\}$, and $\tau = \{\widetilde{\emptyset}, \widetilde{X}, (F_1, E), (F_2, E), (F_3, E)\}$ is a soft topology over X with respect to E, where (F_1, E), (F_2, E), and (F_3, E) are soft sets over X defined as follows:

$$\begin{aligned} F_1(e_1) &= \{h_1\}, \\ F_1(e_2) &= \{h_2, h_3\}, \\ F_2(e_1) &= \{h_2\}, \\ F_2(e_2) &= \{h_1\}, \\ F_3(e_1) &= \{h_1, h_2\}, \\ F_3(e_2) &= X. \end{aligned} \tag{2}$$

Then the soft set (G, E) defined by

$$\begin{aligned} G(e_1) &= \emptyset, \\ G(e_2) &= \{h_1\} \end{aligned} \tag{3}$$

is soft preopen set but not soft α-open set.

Example 4. (1) Let $f : (X, \tau, E) \to (Y, \nu, K)$ be an injective soft function from an indiscrete soft topological space (X, τ, E) into discrete soft topological space (Y, ν, K). Then f is soft precontinuous function but not soft α-continuous.

(2) Let $X = \{h_1, h_2, h_3\}$ be the initial universe and $E = \{e\}$, $K = \{k\}$ are the parameters sets. If $\tau =$

$\{\widetilde{\emptyset}, \widetilde{X}, (F_1, E), (F_2, E), (F_3, E)\}$ is a soft topology on X, where (F_1, E), (F_2, E), and (F_3, E) are soft sets defined as follows,

$$\begin{aligned} F_1(e) &= \{h_1\}, \\ F_2(e) &= \{h_3\}, \\ F_3(e) &= \{h_1, h_3\}, \end{aligned} \tag{4}$$

and ν is the discrete soft topology on X with respect to $K = \{k\}$, let $f : (X, \tau, E) \to (X, \nu, K)$ be a soft function defined by

$$\begin{aligned} u(h_1) = u(h_2) &= \{h_1\}, \\ u(h_3) &= \{h_3\}, \\ p(e) &= k. \end{aligned} \tag{5}$$

Then f is soft semicontinuous but not soft α-continuous function.

(3) Let $X = \{h_1, h_2, h_3\}$, $E = \{e\}$, and $\tau = \{\widetilde{\emptyset}, \widetilde{X}, (F_1, E)\}$ is a soft topology on X with respect to the parameters set $E = \{e\}$, where (F, E) is a soft set on X defined by $F(e) = \{h_1\}$. Then the soft function $f : (X, \tau, E) \to (X, \tau, E)$ defined by

$$\begin{aligned} u(h_1) = u(h_2) &= \{h_1\}, \\ u(h_3) &= \{h_3\}, \\ p(e) &= e \end{aligned} \tag{6}$$

is soft α-continuous but not soft continuous function.

References

[1] M. Akdag and A. Ozkan, "Soft α-open sets and soft α-continuous functions," *Abstract and Applied Analysis*, vol. 2014, Article ID 891341, 7 pages, 2014.