

ADDENDUM

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In our recent paper* on the application of mappings of topological neighborhoods on an open Banach subset Σ to abstract continuous group theory, we found Theorem 4 fundamental. This was to the effect that every homeomorphic mapping of a Σ^1 on a Σ^2 , ($\Sigma^1, \Sigma^2 \subset \Sigma$), is an abstract coordinate transformation. We remark that a rigorous proof of this is assured if the topological space T is subjected further to the second Hausdorff countability axiom.†

Instead of making use of this axiom we prefer to adopt ab initio an alternative mapping. With the notation of our paper we require the following interspace postulates to hold between T and the Banach space B .

(1) For every $U \subset T$, there exists at least one homeomorphism $Uh\Sigma$, where Σ is an open set in B . Let K be the totality of such homeomorphisms.

(2) All such sets Σ lie in a fixed open set $\Gamma \subset B$.

(3) There exists at least one $U_0 \subset T$ such that $U_0h\Gamma$.

(4) If $Uh\Sigma$ is in K and $U' \subset U$, then $U'h\Sigma'$ is in K .

(5) If $Uh\Sigma$ is in K and $\Sigma h\Sigma'$, then $Uh\Sigma'$ is in K .

Appealing to the continuity of $U_0h\Gamma$, we may prove the following theorem:

THEOREM 4'. *Let $\Sigma'h\Sigma^2(\Sigma^1, \Sigma^2 \subset \Gamma)$. Then there exist open subsets $\Lambda^1(\subset \Sigma^1)$ and $\Lambda^2(\subset \Sigma^2)$ such that $\Lambda^1h\Lambda^2$ is an abstract coordinate transformation.*

With this new mapping and with Theorem 4' replacing Theorem 4, the formal deduction of the representative Lie equations proceeds as before with minor changes in interpretation.

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* *Maps of abstract topological spaces in Banach spaces*, this Bulletin, vol. 42 (1936), pp. 529-534.

† F. Hausdorff, *Mengenlehre*, 1927, p. 229. See also W. Sierpinski, *General Topology*, 1934, p. 40.