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**A note on multivalued Baire category theorem.** (English) Zbl 0904.54023

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The author extends Baire's result on iterations of continuous functions defined on complete metric spaces to the multivalued case. More specifically, the following theorem is obtained.

Let $X_n$ be a sequence of regular topological spaces and let $D_n$ be open dense subsets of respectively $X_n$, $n \geq 0$. Assume that one of the spaces $X_n$ is a strongly countable Čech-complete space. If for every $n > 0$ the mapping $F_n : X_n \to X_{n-1}$ is lower semi-continuous and its inverse is upper semi-continuous, then the set $D = D_0 \cap \bigcap_{n=1}^{\infty} F_1 F_2 \dots F_n(D_n)$ is dense in $X_0$.

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**MSC:**

54E52 Baire category, Baire spaces
54C60 Set-valued maps in general topology
26E25 Set-valued functions
26A18 Iteration of real functions in one variable

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