Change of basepoint of the proximate fundamental group

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For a covering V of Y, the function $f : X\to Y$ between two topological spaces is said to be V -continuous at $x\in X$ if there exists a neighborhood U_x of x and $V\in$ V such that $f(U_x)\subseteq V$. The function is said to be V -continuous if it is V continuous at each point of the domain.

For a covering U of the topological space X and $U\in$U, the star of U is the set st$U$=$\cup\{x\in W \mid W\in U, W\cap U\neq\emptyset\}$. By stU we denote the collection of all st$U$ sets, for each U$\in$ U.

The stU-continuous function u: $I\to X$ which is U -continuous on ∂I is called a U -path in X between x=u(0) and y=u(1). We prove that a topological space X is connected if and only if for any covering U of X there exists a U -path between any two points in X.

We apply this result on proving the change of basepoint theorem in the case of proximate fundamental group.

References:

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