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Concatenation of paths in a topological space

Definition. Concatenation of paths in a topological space

Given two paths $p_1, p_2 : [0, 1] \rightarrow X$ such that $p_1(1) = p_2(0)$, the concatenation of the two paths is a new path

$$\begin{aligned} p_1 \cdot p_2 &: [0, 1] \rightarrow X \\ (p_1 \cdot p_2)(t) &:= \begin{cases} p_1\left(\frac{1}{2}t\right) & t \in \left[0, \frac{1}{2}\right] \\ p_2\left(\frac{1}{2}t\right) & t \in \left[\frac{1}{2}, 1\right] \end{cases} \end{aligned}$$



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Current note has 0 direct children and 0 total descendants.

- structures based on sets
 - Topological spaces
 - Paths in a topological space
 - Concatenation of paths in a topological space

And it has 3 siblings.

- structures based on sets
 - Topological spaces
 - Paths in a topological space
 - Concatenation of paths in a topological space
 - Fundamental group of a topological space
 - Path groupoid of a topological space