

Title

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Friday 25th September, 2020

Contents

1 Friday, September 25

1

1 | Friday, September 25

- For X, Y topological spaces, consider $\text{hom}_T(X, Y)$.
 - Topologize with the *compact-open* topology: $U \in \text{hom}_T(X, X)$ open iff for every $f \in U$, $f(K)$ is open for every compact $K \subseteq X$.
 - * If $Y = (Y, d)$ is a metric space, this is the topology of “uniform convergence on compact sets”: for $f_n : X \rightarrow Y$, $f_n \rightarrow f$ in this topology iff

$$\|f_n - f\|_{\infty, K} := \sup \left\{ d(f_n(x), f(x)) \mid x \in K \right\} \xrightarrow{n \rightarrow \infty} 0.$$

- Since these are homeomorphisms, everything is invertible, so equip with function composition to form a group.

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