Title

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- For X, Y topological spaces, consider $\hom_{\top}(X, Y)$.
  - Topologize with the *compact-open* topology: $U \in \hom_T(X, X)$ 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 $f_n \to f$ in this topology iff

$$\|f_n - f\|_{\infty, K} \coloneqq \sup \left\{ d(f_n(x), f(x)) \;\middle|\; x \in K \right\} \overset{n \to \infty}{\to} 0 \quad \forall K \subseteq X \text{ compact.}$$

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