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Zachary Mesyan*, Department of Mathematics, University of Colorado, Colorado Springs, CO 80918, and **James D. Mitchell** and **Yann H. Péresse**. *Topological Transformation Monoids*.

We investigate semigroup topologies on the full transformation monoid X^X of an infinite set X . We show that the standard pointwise topology is the weakest Hausdorff semigroup topology on X^X , show that this topology is the unique Hausdorff semigroup topology on X^X that induces the pointwise topology on the group $\text{Sym}(X)$ of all permutations of X , and construct $|X|$ distinct Hausdorff semigroup topologies on X^X . In the case where X is countable, we prove that the pointwise topology is the only Polish semigroup topology on X^X . (Received August 01, 2019)