

Box Topologies

Definition

Given a family of topological spaces $\mathcal{F} = \{(X_{\alpha}, \mathcal{T}_{\alpha}\}_{\alpha \in I}, \text{ the box topology}$ of \mathcal{F} is the topology on $X = \prod_{\alpha \in I} X_{\alpha}$ generated by the set

$$\left\{ \prod_{\alpha \in I} U_i \mid U_\alpha \in \mathcal{T}_\alpha \right\}$$

