coarser

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Defines	weaker
Defines	finer
Defines	refinement
Defines	expansion

The set of topologies which can be defined on a set is partially ordered under inclusion. Below, we list several synonymous terms which are used to refer to this order. Let $\mathcal{U}$ and $\mathcal{V}$ be two topologies defined on a set E. All of the following expressions mean that $\mathcal{U} \subset \mathcal{V}$:

- $\mathcal{U}$ is **weaker** than $\mathcal{V}$

- $\mathcal{U}$ is **coarser** than $\mathcal{V}$

- $\mathcal{V}$ is **finer** than $\mathcal{U}$

- $\mathcal{V}$ is a **refinement** of $\mathcal{U}$

- $\mathcal{V}$ is an **expansion** of $\mathcal{U}$

It is worth noting that this condition is equivalent to the requirement that the identity map from $(E, \mathcal{V})$ to $(E, \mathcal{U})$ is continuous.