

Comparison of the four constructions

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Comparison

Four basic constructions

- ▶ subspace (embedding)
- ▶ quotient space (quotient map)
- ▶ topological sum
- ▶ product space

Porovnanie

Four basic constructions:

- ▶ Category theory: Special cases of limits or colimits.
- ▶ They are special cases of initial or final topology.
- ▶ Result we have shown already reveal some similarities.

The coarsest topology

The coarsest topology:

- ▶ On $\prod X_i$ such that every $p_i: \prod X_i \rightarrow X_i$ is continuous.
- ▶ On X such that $e: X \hookrightarrow Y$ is continuous.

We took all open sets necessary for the continuity (and to fulfill the definition of topology) and nothing more. navyše.

Najjemnejšia topológia

The finest topology:

- ▶ On $\coprod X_i$ such that every $e_i: X_i \hookrightarrow \coprod X_i$ is continuous.
- ▶ On Y such that $q: X \rightarrow Y$ is continuous.

We want as many open sets as possible – without destroying continuity.