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Section:

6. Topology

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Strong shape for topological spaces

The shape functor S from the homotopy category Ho(Top) to the ordinary shape category Sh(Top) factors through the strong shape category SSh(Top). Its objects are topological spaces. The morphisms $F : X \to Y$ are given by morphisms $\mathbf{f} : \mathbf{X} \to \mathbf{Y}$ of the coherent homotopy category CH(Top) between suitable inverse system expansions $\mathbf{X}$ and $\mathbf{Y}$ of X and Y, respectively. CH(Top) is isomorphic to the localization of pro-Top at level homotopy equivalences. As suitable expansions one uses strong polyhedral expansions, defined by appropriate homotopy conditions, which strengthen the conditions used in ordinary shape. It is shown that these conditions are not only sufficient, but also necessary for insuring the desired conclusions.