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Δ-complex structure on a topological space

Definition. Δ-complex structure on a topological space

A Δ-complex structure on a topological space X is a collection $\sigma = (\sigma_\alpha)$ of maps

$$\sigma_\alpha : \Delta^{n_\alpha} \rightarrow X$$

Such a pair be denoted as (X, σ)

$$\begin{aligned} \Delta_n(X, \sigma) &:= \mathbb{Z}\{e_{\alpha,n}|\}\} \\ &= \mathbb{Z}\{\sigma_\alpha : \Delta^{m_\alpha} \rightarrow X | m_\alpha = n\} \end{aligned}$$

and

$$\partial_n$$

which makes

$$(\Delta_*(X, \sigma), \partial_*)$$

a chain complex.

The chain complex definitely depends on σ .

The homology

$$H^k(\Delta_*(X, \sigma), \partial_*)$$

thus a-priori depends on σ , but

“2402-Simplcomplexes.pdf” could not be found.

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