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cohomological complex of topological vector spaces

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Related topic	HomologicalComplexOfTopologicalVectorSpaces
Related topic	ChainComplex
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Related topic	TangentialCauchyRiemannComplexOfCinftySmoothForms
Related topic	ACRcomplex
Defines	dual of chain complex
Defines	cochain complex
Defines	transpose map
Defines	sequence of topological vector spaces
Defines	sequence of continuous linear maps

Definition 0.1. A *cohomological complex of topological vector spaces* is a pair $(E^\bullet, d)$ where $(E^\bullet = (E^q)_{q \in Z}$ is a sequence of topological vector spaces and $d = (d^q)_{q \in Z}$ is a sequence of continuous linear maps d^q from E^q into E^{q+1} which satisfy $d^q \circ d^{q+1} = 0$.

Remarks

- The *dual complex* of a cohomological complex $(E^\bullet, d)$ of topological vector spaces is the `http://planetmath.org/HomologicalComplexOfTopologicalVectorSpaces`homological complex $(E'_\bullet, d')$, where $(E'_\bullet = (E'_q)_{q \in Z}$ with E'_q being the strong dual of E^q and $d' = (d'_q)_{q \in Z}$, and also with d'_q being the *transpose map* of d^q.

- A cohomological complex of topological vector spaces (TVS) is a specific case of a *cochain complex*, which is the dual of the concept of chain complex.