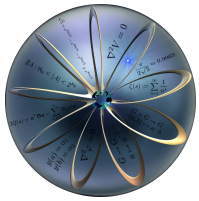

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resolution of a sheaf

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Given a sheaf $\mathcal{F}$ on a topological space X and a pair $(\mathcal{F}^\bullet, d^\bullet)$ where $\mathcal{F}^\bullet = \{\mathcal{F}^q\}_{q\in\mathbb{N}}$ is a family of sheaves on X and $d^\bullet = \{d^q\}_{q\in\mathbb{N}}$ is a family of sheaf morphisms

$$d^q \colon \mathcal{F}^q \to \mathcal{F}^{q+1},$$

we say that $(\mathcal{F}^\bullet, d^\bullet)$ is a *resolution* of $\mathcal{F}$ if there exists an injection $j \colon \mathcal{F} \to \mathcal{F}^0$ such that the sequence

$$0 \to \mathcal{F} \xrightarrow{j} \mathcal{F}^0 \xrightarrow{d^0} \mathcal{F}^1 \xrightarrow{d_1} \cdots \to \mathcal{F}^q \to \dots$$

is exact.