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Formality of derived intersections. (English summary)

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Let Z be a complex manifold. A quantized analytic cycle on Z is a closed connected complex submanifold X of Z together with a retraction σ of the injection of X in its first formal neighborhood in X . The main result of the paper is the following:

Theorem 1. Let Z be a complex manifold, (X, σ) a quantized analytic cycle and Y a smooth complex submanifold such that X and Y intersect linearly. Let $T = X \cap Y$, $\widehat{N} = N_{X/Y}|_T$ and \mathcal{E} be the associated conormal excess bundle on T . Then $j_{Y/Z}^* j_{X/Z*} \mathcal{O}_X$ is formal in the derived category of Y if and only if the excess conormal sequence

$$0 \rightarrow \mathcal{E} \rightarrow \widehat{N} \rightarrow N_{T/Y}^* \rightarrow 0$$

is holomorphically split.

This theorem is used to give a criterion for an analytic cycle to be quantized:

Theorem 2. Let X be a complex submanifold of a complex manifold Y . Then X can be quantized if and only if $j_{X^2/Y^2}^* \mathcal{O}_{\Delta_Y}$ is formal in $\mathcal{D}^b(X^2)$. *Andrei D. Halanay*

References

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.