

Coisotropic A-branes in Symplectic Manifolds

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Abstract

From the point of view of generalized complex geometry, natural submanifolds are generalized complex branes. Inside a symplectic manifold, these are Lagrangian submanifolds, as well as a class of higher-dimensional coisotropic submanifolds referred to as A-branes. In contrast to Lagrangians, these higher-dimensional A-branes are poorly understood, although it is known that they should form additional objects in the Fukaya category, having first been discovered as relevant to mirror symmetry in theoretical physics.

I will describe the additional structure making a coisotropic submanifold into a brane and discuss the deformation theory of coisotropic A-branes in examples. In general, the presence of a brane structure drastically reduces the size of the deformation space compared to just deforming the underlying coisotropic submanifold, but we also find an additional type of deformation which leaves the underlying submanifold invariant.

References

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