Coisotropic branes in symplectic geometry

Marco ZAMBON[1]

[1] KU Leuven

A brane in a symplectic manifold M is a coisotropic submanifold N together with a closed 2-form which is compatible in a specific sense. This notion arises naturally from generalized complex geometry. We will first consider the case $N = M$ (space-filling branes), i.e. the case in which M carries a holomorphic symplectic form. We will present some results on the deformations of the brane structure, i.e. deformations to nearby holomorphic symplectic forms having the same imaginary part. For branes supported on lower-dimensional submanifolds, we then address the question of whether all coisotropic submanifolds nearby a given brane are themselves brane. We will elaborate on why the answer is negative in general, and provide an example. This talk is based on ongoing work with Charlotte Kirchhoff-Lukat.