

Geometry, Physics, and Representation Theory
Northeastern University

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Thursday, Oct 29, 12-1 pm, Lake Hall 509 (note unusual day!)

Construction of locally conformal symplectic structures

Abstract. According to Darboux's theorem, a symplectic structure on a manifold can be thought of as an atlas of charts to \mathbb{C}^n , which are glued together by symplectomorphisms. If instead we are allowed to glue by maps which dilate the symplectic structure by a positive constant, the induced structure is called a locally conformal symplectic structure. In particular, if $H^1(M) = 0$, an lcs structure is just a symplectic structure, modulo global rescaling by a constant. We'll discuss some of the basic geometry of these structures, and then focus on proving that every almost complex manifold with $b_1 > 0$ admits an lcs structure. This project is joint work with Yasha Eliashberg.