CAGATAY KUTLUHAN, University at Buffalo
Sutured ECH is a natural invariant

A few years ago, Taubes showed that Hutchings's embedded contact homology (ECH) is canonically isomorphic to a version of Seiberg–Witten Floer cohomology. It follows as a consequence that ECH is a topological invariant of the underlying 3-manifold. More recently, Hutchings and Taubes showed that filtered ECH is only dependent on the choice of a contact form. In joint work with Steven Sivek, we prove an analog of the latter result for sutured ECH, defined by Colin, Ghiggini, Honda, and Hutchings for contact 3-manifolds with convex boundary, which are naturally sutured manifolds. Furthermore, we show that sutured ECH is a natural invariant, and that it admits a contact class that is preserved under maps induced by deformations of the contact structure relative to the boundary of the 3-manifold. The aim of this talk is to explain the mechanics of our proof, which uses a compactness result for solutions of the Seiberg–Witten equations on certain non-compact contact 3-manifolds and their symplectizations due to Taubes.