Ko Honda* (honda@math.ucla.edu). Convex hypersurface theory in contact topology.

We explain the basics of convex hypersurface theory (CHT) in contact topology, extending the work of Giroux in dimension three. Specifically, any closed hypersurface in a contact manifold can be $C^0$-approximated by a convex one and a $C^0$-generic family of mutually disjoint closed hypersurfaces parametrized by $t \in [0, 1]$ is convex except at finitely many times $t_1, \ldots, t_N$, and that crossing each $t_i$ corresponds to a bypass attachment. As applications of CHT, we prove the existence of compatible (relative) open book decompositions for contact manifolds and an existence $h$-principle for codimension 2 contact submanifolds. This is joint work with Yang Huang. (Received August 16, 2019)