

This thesis deals with results concerning both flexible and rigid parts of contact topology. Basic notions of contact topology and constructions of higher-dimensional Legendrian submanifolds are stated. There is proved the existence of infinite family of pair-wise Legendrian non-isotopic loose Legendrian embeddings of 3-torus so that each embedding is not a Legendrian product of lower-dimensional tori. In the rest of the text, the bilinearized Legendrian contact homology invariant is described and the criterion for DGA-homotopy of augmentation of Chekanov-Eliashberg algebra for disconnected Legendrian submanifolds is proved.