

# Essential dichotomy in contact topology

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**Abstract.** A contact structure is a completely non-integrable hyperplane field usually defined by a global Pfaff equation. However, in saying so, I suspect that  
1) three dimensional contact topology is just a three dimensional topology for an imaginary person who does not know a mirror, and  
2) higher dimensional contact topology is just an analogue of three dimensional contact topology.

Indeed a contact structure fixes the orientation of the manifold even locally, while it has no moduli even globally. (A person who knows a mirror must wonder about the fact that two closed braids present the same contact knot iff they are related by only right-handed stabilizations/destabilizations.)

Though a 3-manifold admits infinitely many contact structures, most of them (i.e., overtwisted ones) are spoiled and uniquely determined by homotopy data of plane fields. Contrastingly, the topology of the other decent structures (i.e., tight ones) adds a few extra data to the topology of the 3-manifold itself.

I will talk about this dichotomy (overtwisted vs. tight) and its tentative generalizations.