

## Contact Structures on High Dimensional Manifolds

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Abstract: Contact structures on manifolds are very natural objects. Born over two centuries ago, in the work of Huygens, Hamilton and Jacobi on geometric optics, they have been studied by many mathematicians and seem to touch on diverse areas of mathematics and physics, but only in the last decade or two have they moved into the foreground of mathematics. Despite their long history we still do not know which manifolds admit contact structures. In this talk we will survey some of the history of contact geometry and its connections with other areas and then discuss recent progress on understanding which manifolds admit contact structures. In particular, we will focus on dimension 5 where a complete understanding of the existence questions has recently been achieved.