

John Etnyre

Title: Legendrian cables

Abstract: Legendrian and transverse knots have played a large role in the development of 3 dimensional contact geometry, and studying Legendrian and transverse representatives of torus knots and cable knots has played a large role in our understanding of the general behavior of Legendrian and transverse knots. In this talk I will discuss some recent progress in the area. In particular, I will discuss joint work with Jennifer Dalton and Lisa Traynor about torus links and cable links. For example for nice knot types (uniform thick) we show that when considering the symmetries of Legendrian cables all topological symmetries, only cyclic symmetries, or no symmetries are allowed if the cabling slope is larger than, less than, or equal to the maximal Thurston-Bennequin invariant. This is one of the first classifications of infinite families of Legendrian links where restrictions on symmetries are present. We will also discuss joint work with Apratim Chakraborty and Hyun Ki Min that completely describes Legendrian representatives of large positive cable knots in terms of the underlying knot as well as explain the phenomena of Legendrian large cables. The latter, which have only recently been discovered, are Legendrian representatives of a cabled knot type with Thurston-Bennequin invariant larger than was classically expected.