Julian Chaidez* (jchaidez@berkeley.edu). Combinatorial Reeb Dynamics and Rotation Numbers.

Many open problems in contact geometry center on quantitative properties of Reeb flows. For instance, the Viterbo conjecture proposes an isoperimetric inequality relating the minimal period of a closed Reeb orbit on the boundary of a convex domain in $\mathbb{C}^n$ to that domain’s volume. One challenge to our understanding of these questions is a general lack of computationally tractable examples. In this talk, I will discuss an ongoing series of projects developing a theory of Reeb flows on certain triangulated spaces, and as a specific starting point, convex polytopes in $\mathbb{C}^2$. One can use some of this theory to write computer programs and probe quantitative questions about Reeb flows on convex domains by doing numerical experiments. I will present some of the interesting outcomes of these experiments. (Received February 04, 2020)