1142-20-176 **Marissa Kawehi Loving*** (mloving2@illinois.edu). *Length spectra of flat metrics coming from q-differentials.*

When geometric structures on surfaces are determined by the lengths of curves, it is natural to ask *which* curves' lengths do we really need to know? It is a classical result of Fricke that a hyperbolic metric on a surface is determined by its marked simple length spectrum. More recently, Duchin–Leininger–Rafi proved that a flat metric induced by a unit-norm quadratic differential is also determined by its marked simple length spectrum. In this talk, I will describe a generalization of the notion of simple curves to that of *q-simple curves*, for any positive integer q, and show that the lengths of q-simple curves suffice to determine a non-positively curved Euclidean cone metric induced by a q-differential metric. (Received September 03, 2018)