

1112-37-618

Caglar Uyanik (cuyanik2@illinois.edu), 1409 W. Green Street, Urbana, IL 61801, and **Grace Work*** (work2@illinois.edu), 1409 W. Green Street, Urbana, IL 61801. *Gap distribution for saddle connections on the octagon.*

Following a strategy developed by Athreya and Cheung, we compute the gap distribution of the slopes of saddle connections on the octagon by translating the problem to a question about return times of the horocycle flow to an appropriate Poincaré Section. This same strategy was used by Athreya, Chaika, and Lelièvre to compute the gap distribution on the Golden L. The octagon is the first example of this type of computation where the Veech group has two cusps. (Received August 11, 2015)