1112-37-307 **Jason Siefken***, siefkenj@math.northwestern.edu. *Explicit Return Times for a Subsystem of the Kari-Culik Tilings.*

A Wang tiling of the plane is a tiling of the plane by square tiles with colored edges satisfying the property that two tiles lie adjacent only if the colors on their shared edge match. In 1966, Berger found a set of 20426 Wang tiles that admit only aperiodic tilings of the plane. In 1995, Kari and Culik introduced a set of 13 Wang tiles that admit only aperiodic tilings of the plane. Unlike previous examples, these 13 Kari-Culik tiles exploit number-theoretic properties to ensure aperiodicity. This talk will give an overview of the Kari-Culik tilings as well as upper bounds on the return time of a minimal subsystem of the Kari-Culik tilings when treated as a $\mathbb{Z}^2$ dynamical system. (Received August 07, 2015)