Kien Nguyen* (kien@math.umass.edu), Department of Mathematics and Statistics, University of Massachusetts Amherst, Amherst, MA 01003, and HongKun Zhang (hongkun@math.umass.edu), Department of Mathematics and Statistics, University of Massachusetts Amherst, Amherst, MA 01003. Central limit theorem for billiards with flat points.

In this paper, we constructed stationary martingale difference approximations to certain processes generated by billiards with flat points, using the filtration generated by the first return time function. This leads to the central limit theorem for observables adapted to the filtration. Moreover, we also are able to obtain an explicit formula for the diffusion constant for this class of observables. (Received July 26, 2018)