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Anthony Sanchez* (asanch33@uw.edu), Seattle, WA 98115. *Gaps of saddle connection directions for some branched covers of tori*. Preliminary report.

Consider the class of translation surfaces given by gluing two identical tori along a slit. Every such surface has genus two and two cone-type singularities of angle 4π . There is a distinguished set of geodesics called saddle connections that are the geodesics between cone points. We can recover a vector in the plane representing the saddle connection by keeping track of the amount that the saddle connection moves in the vertical and horizontal direction. How random is the set of saddle connections? We motivate the gap distribution of slopes as a measure of randomness and compute the gap distribution of slopes of saddle connections. (Received August 29, 2020)