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COUNTING PAIRS OF SADDLE CONNECTIONS

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We will introduce the Siegel–Veech transform which gives an expected count for the number of saddle connections on translation surfaces. In the case where our translation surface has a large stabilizer group, we can explicitly write down the second moment of the Siegel–Veech transform. Canonically one computes the second moment formula to obtain variance estimates, which we will state. Moreover, the second moment formula can be used directly to count pairs of saddle connections with given relations. For example, we will discuss how we use the second moment formula to count saddle connections which have another saddle connection nearby. We will focus on a few concrete examples, and highlight the novelty of this approach in the context of previous work. This is joint work with Claire Burrin.