

In this talk, we investigate the question of determining the maximal possible intersection of two closed curves of a given length. After presenting the context and motivations, we will focus on the example case of the double pentagon, a translation surface constructed from two pentagons. Then, we raise the question of generalizing the result to the case of flat surfaces constructed from a collection of convex polygons with obtuse angles. Finally, we will see how one can hope to use this method to relate the maximal possible intersection of two closed curves of a given length to the systolic volume.