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Tarik Aougab* (tarik.aougab@yale.edu), 1275 Chapel Street, Apt. 5, New Haven, CT 06511,
and **Shinnyih Huang**. *Minimally intersecting filling pairs*.

Let S_g denote the closed orientable surface of genus g , \mathcal{M}_g the moduli space of hyperbolic metrics on S_g , and $\text{Mod}(S_g)$ the mapping class group. A filling pair is a pair of simple closed curves (α, β) on S_g such that no essential simple closed curve is disjoint from both α and β . As a function of g , we construct exponentially many $\text{Mod}(S_g)$ -orbits of filling pairs on S_g which intersect minimally.

As an application, we characterize the global minima of the function $\text{MFill} : \mathcal{M}_g \rightarrow \mathbb{R}$ which given a metric σ , outputs the length of the shortest minimally intersecting filling pair on σ and show that there are exponentially many minima; we also show the existence of some uniform constant K (independent of g) such that all such minima are in the K -thick part of \mathcal{M}_g . Time permitting, we'll also discuss applications of these filling pairs to studying the coarse geometry of the curve complex. (Received January 20, 2014)