WILLIAM MENASCO, University of Buffalo

A construction of minimal coherent filling pairs

Let S_g denote the genus g closed orientable surface. A *coherent filling pair* of simple closed curves, (α, β) in S_g, is a filling pair that has its geometric intersection number equal to the absolute value of its algebraic intersection number. A *minimally intersecting* filling pair, (α, β) in S_g, is one whose intersection number is the minimal among all filling pairs of S_g. In this talk, we give a simple geometric procedure for constructing minimally intersecting coherent filling pairs on $S_g,\ g \geq 3$, from the starting point of a coherent filling pair of curves on a torus. Coherent filling pairs have a natural correspondence to square-tiled surfaces, or *origamis*, and we discuss the origami obtained from the construction.

This work is joint with Hong Chang [Beijing International Center for Mathematical Research (BICR)].