The Dynamics of Quadrilateral Folding

Kevin Charter
Thomas Rogers

Abstract

When a quadrilateral undergoes a certain infinite folding process, an intricate curve is traced out by its transformed vertices. The curve possesses attractive symmetry properties. We study the folding as a dynamical system in $\mathbb{C}^4$, which is partially described by a billiard-like dynamical system on the bounded component of an elliptic curve associated with the squared diagonal lengths.