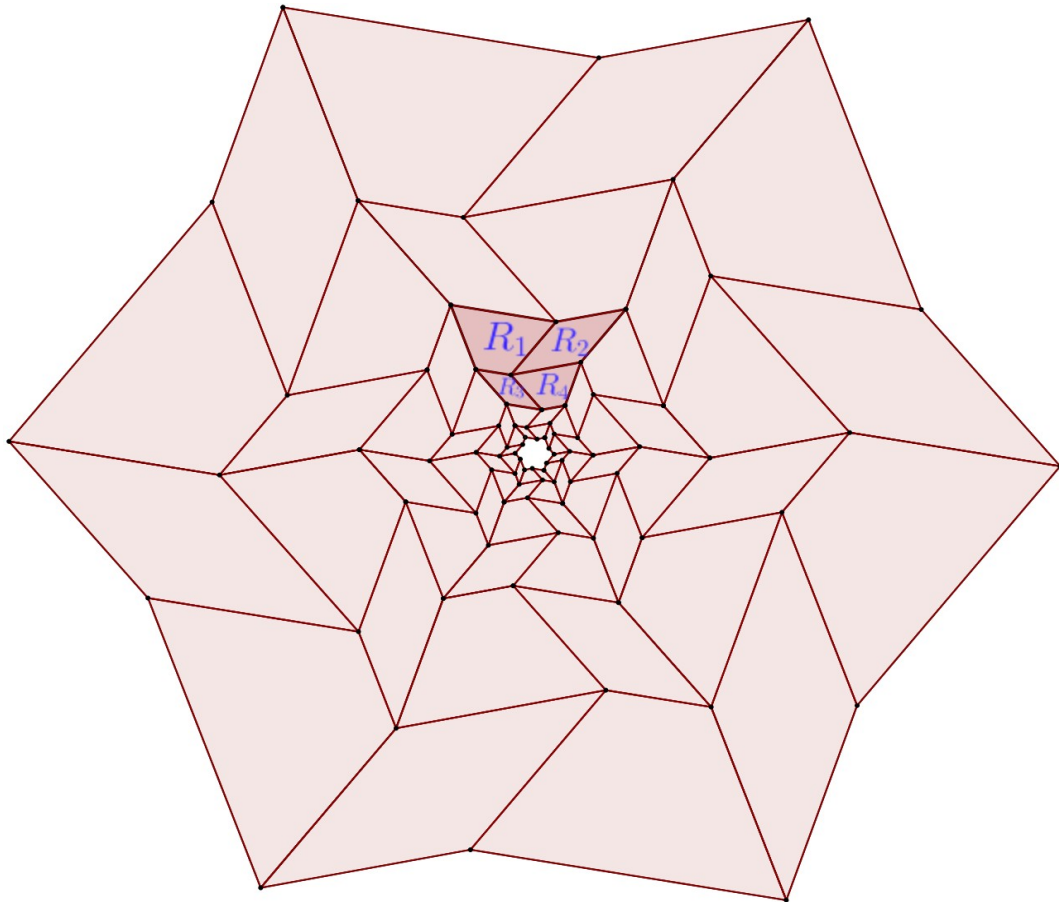


Low dimensional Topology, Applied Topology

Tsuyoshi KOBAYASHI [Physics and Mathematics Course]



Crease pattern of a rigid, flat foldable origami constructed by using similarity structure of 2-dimensional torus

I am interested in Low dimensional Topology and its applications. The following is a list of my research subjects.

1. Research on shapes of 3-dimensional spaces.

I am trying to recognize 3-dimensional (invisible) spaces by using various techniques to study the structures of the spaces.

2. 3-dimensional topology and mixing fluids

Mixing viscous fluid is one of the important subject in fluid mechanics, not only because it is theoretically interesting but also it is related to processes in chemical industry, biochemical industry, etc. I am interested in efficient mixing based on the theory of braids in low dimensional topology.

3. Geometry in Origami.

I am studying relationships between origami and various fields in mathematics. For example we can construct rigid and flat foldable origami by using the theory of similarity structure on 2-dimensional torus introduced by Thurston for studying hyperbolic 3-manifold.

Keywords : 3-manifold, Knots and Links, Mixing fluids, Origami