Faculty of Science and Technology
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Embedded Topology of Plane Curves

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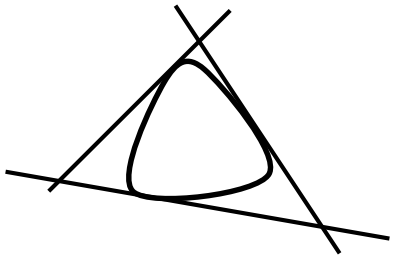
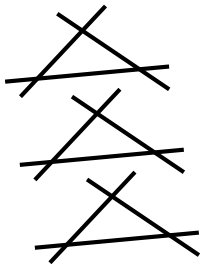
<図表>



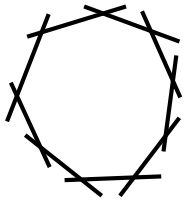
A plane curve consisting of
a smooth curve and three lines

The pull-back of three lines under a Galois cover branched along the smooth curve

Case 1.
Several triangles



Case 2.
One polygon



This difference show difference of embedded topology of plane curves.

Content:

It is known that two algebraic curves on the complex projective plane (called plane curves) may have different embedded topology if arrangement of their singularities are different. Namely, one plane curve cannot be deformed continuously to the other curve in the projective plane. I study the criterion for distinguishing the embedded topology of plane curves.

The complex dimension of complex projective plane is 2. Hence the real dimension of the plane is 4. The difficulty of this study is that we do not know how to watch the whole of the plane. Thus we need a language to represent difference of embedded topology of plane curves.

Recently, it is known that the “splitting” of plane curves by pull-back under a Galois cover over the plane represent difference of embedded topology of plane curves. In this study, we define the invariant “splitting graph” which is a language for representing the splitting of plane curves for Galois covers, and give a criterion for distinguishing embedded topology of plane curves.

Keywords : Plane Curve,
Embedded Topology,
Galois Cover

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