

Topology of plane curves and “arithmetic” of double covers of \mathbb{P}^2

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SUMMARY

Let C be a reduced plane algebraic curve $\subset \mathbb{P}^2$. The combinatorics of C (or The combinatorial type of C means that roughly speaking, Data on • the degrees of irreducible components, • how irreducible components intersects, • the topological types of singularities and so on. One of naive questions is:

Problem: What can we say about the topology of (\mathbb{P}^2, C) just from the combinatorics of C ?

Since the topology of (\mathbb{P}^2, C) is not necessarily determined by the combinatorics of C , the above question is subtle. To consider the above problem, various topological invariants have been used. In this talk, we introduce a new point of view “arithmetic” of double covers and explain how it works through some examples.

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