

Dessins d'enfants and origamis

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007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

In this talk, we will begin by looking at branched covers of the projective line. Such covers became part of mainstream mathematics thanks to Grothendieck, who was interested in such covers as a way to understand the absolute Galois group of the rational numbers and hence to learn more about the sorts of number fields that exist. In this case, we can explicitly construct some interesting number fields. We will then talk about the analogous problem for elliptic curves. In this case, the computations are far more difficult, but in theory, they allow us similar opportunities. We shall see how one can go about writing down explicit examples of covers of elliptic curves in special cases. We shall also see that both covers of the projective line and covers of elliptic curves have pictorial representations that capture a wealth of combinatorial and topological information, and that are fun to study.