(g, k)-Fermat Curves

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Resumen

Let S be a closed Riemann surface and let $\mathrm{Aut}(S)$ be its group of conformal automorphisms.

We say that S is a (g, k)-*Fermat curve*, where $g, k \geq 2$ are integers, if there is a group $H < \mathrm{Aut}(S)$, $H \cong \mathbb{Z}_k^{2g}$, acting freely on it, such that $R = S/H$ has genus g. In this case, we say that H is a (g, k)-*Fermat group*, that (S, H) is a (g, k)-*Fermat pair* and that S is a k-*homology cover* of R. By the Riemann-Hurwitz formula, S has genus $\gamma = 1 + k^{2g}(g - 1)$.

In this talk I will discuss some recent results concerning these types of Riemann surfaces.