



Seminário do Grupo de Álgebra e Geometria

On the maximum number of different types of regular dessins which a Riemann surface of genus > 0 can carry

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Resumo

Belyi's Theorem asserts that a compact Riemann surface is defined (as an algebraic curve) over an algebraic number field if and only if it is uniformised by a subgroup of finite index in a triangle group (generated by rotations around the vertices of a triangle). Such an inclusion in a triangle group imposes a combinatorial structure on the surface (a map or hypermap) which Grothendieck called a “dessin d'enfant”, or simply a dessin. The regular dessins are the most symmetric, corresponding to normal subgroups of triangle groups. Their type is the triple of orders of the rotations generating the triangle group, corresponding to valencies of vertices in the embedded graph.

In 2003 Girono proved that a compact Riemann surface of genus > 0 carries regular dessins (or hypermaps) of no more than seven different types, and then asked whether this upper bound is ever attained. Using results of Singerman and Takeuchi on inclusions and commensurability of triangle groups we prove that it is attained by a surface S of genus 721, and by surfaces of infinitely many larger genera, but by none of smaller genera.

Six of the dessins on S are 360-sheeted coverings of regular dessins of genus 3, which I will illustrate.

Detalhes do Seminário

- **Data e hora:** 11 de junho de 2026, 11:00 – 12:00
- **Link da sessão do Zoom:**

<https://videoconf-colibri.zoom.us/j/91408172760?pwd=K9sHx8vFTvLhZ1fQKAk40yaNVg2dIq.1>

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