UNIVERSIDAD DE LA FRONTERA

SEMINARIO CRUZ DEL SUR

DEPARTAMENTO DE MATEMÁTICA Y ESTADÍSTICA – UFRO

GENERALIZED QUATERNION GROUPS AS GROUPS OF AUTOMORPHISMS OF RIEMANN SURFACES

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Auditorio Prof. Manuel López Ramírez

Resumen.

Let Q_{2^n} be the generalized quaternion group of order 2^n, where $n \geq 3$. It is a well known fact that Q_{2^n} acts as a group of conformal automorphisms of some closed Riemann surface S.

In this talk we describe the actions of Q_{2^n} on S, with *triangular quotient* (i.e., the quotient orbifold S/Q_{2^n} has genus zero and it has exactly three cone points). We observe that such an action is unique, up to isomorphisms, and that it is purely non-free (i.e., every element of Q_{2^n} has fixed point). As a consequence, the *strong symmetric genus of* Q_{2^n} (i.e., the minimal genus of S admitting Q_{2^n} as a group of conformal automorphisms) equals the minimal genus of S where Q_{2^n} act *purely non-free*, this being 2^{n-2}. We also obtain that the symmetric genus of Q_{2^n} is $2^{n-2}+1$.

Also, we prove that there is a pseudo-real Riemann surface for which Q_{2^n} is the full group of conformal/anticonformal automorphisms. This is joint work with Ruben A. Hidalgo.

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