Conferencia

Fields of moduli of homology or orbifolds with signature (0;A;B;C;D)

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Resumen:
Every non-singular irreducible projective algebraic curve admits, by the implicit function theorem, a natural structure of a closed Riemann surface and, conversely, as a consequence of the Riemann-Roch theorem, every closed Riemann surface can be described by some nonsingular irreducible projective algebraic curve. This interplay, permits to study closed Riemann surfaces from a point of view of complex analysis and also from an algebraic point of view. In particular, the group Aut(C) of fields automorphisms of the field C of complex numbers acts on the moduli space of closed Riemann surfaces. To understand such a dynamic is a very difficult task. To each (conformal class of a) closed Riemann surface S, there is associated the stabilizer subgroup G of the conformal class of S. The fixed field of G, say M(S), is called the field of moduli of S. It is well known that if S can be described by an algebraic curve over a subfield K of C (we say that K is a field of definition of S), then M(S) is a subfield of K. In general, M(S) is not a field of definition of S. Weil's theorem provides necessary and sufficient conditions for M(S) to be a field of definition for S. Let Aut(S) be the group of conformal automorphisms of S. If Aut(S) is trivial, then such conditions hold trivially and M(S) is a field of definition. Unfortunately, such conditions are in general difficult to see if Aut(S) is non-trvial. If S/Aut(S) is an orbifold with signature of the form (0;a,b,c) [S is called a quasiplatonic surface], then S can be defined over its field of moduli.

In this talk, I plan to recall the definition of fields of moduli and fields of definitions of a closed Riemann surface and to discuss the above for the case when S/Aut(S) has signature (0;a,b,c,d).