On the Connectivity of Branch Loci of Spaces of Curves

Milagros Izquierdo
Linköping University
milagros.izquierdo@liu.se
Antonio F Costa
UNED, Madrid
acosta@mat.uned.es

Since the 19th century the theory of Riemann surfaces has a central place in mathematics putting together complex analysis, algebraic and hyperbolic geometry, group theory and combinatorial methods.

Since Riemann, Klein and Poincar'e among others, we know that a compact Riemann surface is a complex curve, and also the quotient of the hyperbolic plane by a Fuchsian group.

In this talk we study the connectivity of the moduli spaces of Riemann surfaces (i.e in spaces of Fuchsian groups). Spaces of Fuchsian groups are orbifolds where the singular locus is formed by Riemann surfaces with automorphisms: *the branch loci*: With a few exceptions the branch loci is disconnected and consists of several connected components.

This talk is a survey of the different methods and topics playing together in the theory of Riemann surfaces.

Joint wotk with Antonio F. Costa