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**Biholomorphic transformations of closed Riemann surfaces**

*Abstract:* Let  $g > 1$  be an integer.  $\Sigma_g$ , the closed orientable surface of genus  $g$ , can be considered a complex analytic 1-manifold, and a classical theorem of Hurwitz (1862) states that the group of all biholomorphic maps of  $\Sigma_g$  onto itself is finite of cardinality  $\leq 84(g-1)$ . R.S. Kulkarni showed in 1982 that this is in essence a topological result by proving a topological theorem (on compact Lie group actions on spaces of negative Euler characteristic) which contains Hurwitz's theorem as a special case. We shall explain how  $\Sigma_g$  can be endowed with complex analytic structure, state Kulkarni's theorem, and show how the latter implies Hurwitz's theorem.