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Gareth A. Jones* (G.A.Jones@maths.soton.ac.uk), School of Mathematics, University of Southampton, Highfield, SO17 1BJ Southampton, Hampshire, England. *Automorphism groups of compact Riemann surfaces.*

I shall discuss joint work with Mikhail Belolipetsky (Novosibirsk and Jerusalem), using techniques from finite group theory to consider groups of automorphisms of compact Riemann surfaces. We show that for every g greater than 1 there is a compact arithmetic Riemann surface of genus g with at least $4(g - 1)$ automorphisms, and that this lower bound is attained by infinitely many g , the smallest being 24. We also extend earlier work of Accola, showing that if S is a compact Riemann surface of genus $g = p + 1$, where p is prime, with a group of automorphisms G of order greater than $6(g - 1)$, then for sufficiently large g the surface S and group G lie in one of six infinite sequences of examples. (Received February 21, 2005)