

THE GOOD PANTS AND THE EHRENPREIS CONJECTURE

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Abstract. The Ehrenpreis conjecture states that for every $\epsilon > 0$, any two closed hyperbolic Riemann surfaces have finite covers that are ϵ close in the Teichmueller metric on the corresponding Moduli space. Recently, J. Kahn and I have announced a proof of this conjecture. We show that every closed hyperbolic Riemann surface has a cover that is made out of good pants that are glued to each other with a twist that is nearly equal to $+1$. We construct such a cover by assembling a large number of good pants that are immersed in our original surface. Our method is based on two main results. The first is the Equidistribution Theorem which have been proved in our previous work on the Surface Subgroup Theorem. The new result is the Good Correction Theorem which states that the Good Pants Homology is the same as the standard homology on a hyperbolic Riemann surface.