Kähler groups, $\mathbb{R}$-Trees and holomorphic families of Riemann surfaces

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Let X be a compact Kähler manifold, and g a fixed genus. Due to the work of Parshin and Arakelov, it is known that there are only a finite number of non-isotrivial holomorphic families of smooth Riemann surfaces of given genus over X. We explain that this number only depends on the fundamental group of X.