Relatively Hyperbolic Groups have Semistable Fundamental Group at Infinity

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Abstract. Suppose G is a 1-ended finitely generated group that is hyperbolic relative to $\mathbf{P}$ a finite collection of 1-ended finitely generated proper subgroups of G. Our main theorem states that if the boundary $\partial(G, \mathbf{P})$ has no cut point, then G has semistable fundamental group at ∞. Under mild conditions on G and the members of $\mathbf{P}$ the 1-ended hypotheses and the no cut point condition can be eliminated to obtain the same semistability conclusion. We give an example that shows our main result is somewhat optimal. Finally, we improve a "double dagger" result of F. Dahmani and D. Groves.