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From local to global conjugacy in relatively hyperbolic groups

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Abstract:
Relatively hyperbolic groups were introduced by Gromov (1987). It is known (see Hrushka (2010)) that essentially different definitions given by Gromov, Bowditch, and Osin coincide in the case, where the ambient group is countable and the peripheral subgroups are infinite. In the first part of my talk I will recall the combinatorial definition of Osin and formulate some statements which help to work in this area. In the second part I will explain new results concerning the conjugacy of subgroups in relatively hyperbolic groups. In particular, we prove the following theorem:

Theorem 0.1. *Suppose that a finitely generated group G is hyperbolic relative to a collection of subgroups P. Let H_1, H_2 be subgroups of G such that H_1 is relatively quasiconvex with respect to P and H_2 has a loxodromic element. Suppose that H_2 is element-wise conjugate into H_1. Then there exists a finite index subgroup of H_2 which is conjugate into H_1. The minimal length of the conjugator can be estimated.*

Corollary 0.2. Let G be a limit group and let H_1 and H_2 be subgroups of G, where H_1 is finitely generated. Suppose that H_2 is element-wise conjugate into H_1. Then there exists a finite index subgroup of H_2 which is conjugate into H_1.

The index depends only on H_1. The minimal length of the conjugator can be estimated. This implies that limit groups are subgroup conjugacy separable.

Other theorems concerning hyperbolic virtually compact special groups will be given in the talk. This is a joint work with K.-U. Bux.