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Dehn fillings for the isomorphy problem among relatively hyperbolic groups

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The algorithmic problem of deciding whether two finite presentations define isomorphic groups has received a positive solution in a broad context of groups with properties of negative curvature. The theory of equations in such groups (in particular in free groups) appears to play a role in most parts of the solution (a role more or less explicit according to which part). The context of relatively hyperbolic groups is at the cut edge of the problematic, since they carry well behaved negatively curved geometry, and yet, they might present critical problems for the resolution of equations. We propose a way to solve isomorphy problems for certain such groups (so far, the rigid ones) assuming that the peripheral subgroups are residually finite (in particular no assumption is made on solvability of equations, or even of the isomorphism problem)

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