

## **Generalized Residual Properties of Groups**

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A countable group is said to be residually finite if every nontrivial element is excluded from some finite index subgroup. If  $\alpha$  is an ordinal, we define a property we call  $\alpha$ -residually finite. We characterize this property in terms of an action on a transfinite tree, and exhibit constructions of finitely generated groups with various residual depths.

**(joint work with Kasia Jankiewicz)**