Some countably recognizable classes of groups

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Abstract

Let \( \mathcal{X} \) be a class of groups. Then \( L_{\aleph_0} \mathcal{X} \) is the class of groups \( G \) such that every countable subset of \( G \) is contained in an \( \mathcal{X} \)-subgroup of \( G \). We say that \( \mathcal{X} \) is countably recognizable provided \( L_{\aleph_0} \mathcal{X} = \mathcal{X} \). When \( \mathcal{X} \) is subgroup closed this is equivalent to saying that \( G \in \mathcal{X} \) whenever every countable subgroup of \( G \) is in \( \mathcal{X} \). In this talk I’ll discuss some recent results concerning the class \( \mathcal{SR} \), where \( \mathcal{S} \) is the class of soluble groups and \( \mathcal{R} \) is the class of groups of finite rank. The main result is that this class of groups is countably recognizable. This represents recent joint work with Martin Evans and Howard Smith.

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