Mathematics > Group Theory

The computational complexity of recognising embeddings in finitely presented groups

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We extend a result by Lempp that recognising torsion-freeness for finitely presented groups is Π^{0}_{2}-complete; we show that the problem of recognising embeddings of finitely presented groups is at least Π^{0}_{2}-hard, Σ^{0}_{2}-hard, and lies in Σ^{0}_{3}. We conjecture that this problem is indeed Σ^{0}_{3}-complete. We use our constructions to form a universal finitely presented torsion-free group.

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