

# Torsion-Free Abelian Groups are Borel Complete

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We survey the following result joint with S. Shelah: the Borel space of torsion-free Abelian groups with domain  $\omega$  is Borel complete, i.e., the isomorphism relation on this Borel space is as complicated as possible, as an isomorphism relation. This solves a long-standing open problem in descriptive set theory, which dates back to the seminal paper on Borel reducibility of Friedman and Stanley from 1989. Time permitting, we will also survey more recent results on the co-complete co-analyticity of various rigidity conditions in abelian and nilpotent groups.

## References

- [1] Gianluca Paolini and Saharon Shelah. Torsion-Free Abelian Groups are Borel complete. Submitted.
- [2] Gianluca Paolini and Saharon Shelah. Anti-Classification Results for Rigid Abelian and Nilpotent Groups. In preparation.

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