

► ANDRÉS E. CAICEDO, G_0 -dichotomies.

Department of Mathematics, Boise State University, 1910 University Drive, Boise, ID 83725-1555, USA.

E-mail: caicedo@math.boisestate.edu.

URL Address: <http://math.boisestate.edu/~caicedo/>.

The graph G_0 of Kechris-Solecki-Todorčević [3] is a key object in descriptive set theory. The theory $\text{ZF} + \text{DC}_{\mathbb{R}} +$ there is a fine σ -complete measure on $\mathcal{P}_{\omega_1}(\mathbb{R})$ holds in the version of Solovay's model obtained by Levy collapsing a measurable cardinal to ω_1 , and in all known models of the axiom of determinacy AD .

Continuing [1], Richard Ketchersid and I prove in this theory a version of the G_0 -dichotomy for ∞ -Borel sets, and use it to show that the quotient of \mathbb{R} by the equivalence relation E_0 is a successor of \mathbb{R} , a result previously known under $\text{AD}_{\mathbb{R}}$, but (perhaps surprisingly) not in $L(\mathbb{R})$. We generalize this dichotomy to an appropriate "local" version, which allows us to recover the AD^+ -version of a dichotomy theorem of Hjorth [2], and to an infinite dimensional setting, previously investigated for analytic graphs by Lecomte and Miller.

[1] ANDRÉS E. CAICEDO, RICHARD KETCHERSID, *A trichotomy theorem in natural models of AD^+* , **Proceedings of the conference Boise Extravaganza in Set Theory**, (Boise, ID), (Liljana Babinkostova, Andrés Caicedo, Stefan Geschke, Richard Ketchersid, Marion Scheepers, editors), AMS, to appear.

[2] GREG HJORTH, *A dichotomy for the definable universe*, **The Journal of Symbolic Logic**, vol. 60 (1995), no. 4, pp. 1199–1207.

[3] ALEXANDER KECHRIS, SŁAWOMIR SOLECKI, STEVO TODORČEVIĆ, *Borel chromatic numbers*, **Advances in Mathematics**, vol. 141 (1999), no. 1, pp. 1–44.