

Almost all Cayley maps are mapical regular representations

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Received 13 February 2023, accepted 5 May 2023, published online 6 July 2023

Abstract

Cayley maps are combinatorial structures built upon Cayley graphs on a group. As such the original group embeds in their group of automorphisms, and one can ask in which situation the two coincide (one then calls the Cayley map a mapical regular representation or MRR) and with what probability. The first question was answered by Jajcay. In this paper we tackle the probabilistic version, and prove that as groups get larger the proportion of MRRs among all Cayley Maps approaches 1.

Keywords: Regular representation, Cayley map, automorphism group, asymptotic enumeration, graph-ical regular representation, GRR.

Math. Subj. Class. (2020): 05C25, 05C30, 20B25, 20B15

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Skoraj vsi Cayleyjevi zemljevidi so zemljevidne regularne predstavitve

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Prejeto 13. februarja 2023, sprejeto 5. maja 2023, objavljeno na spletu 6. julija 2023

Povzetek

Cayleyjevi zemljevidi so kombinatorične strukture, zgrajene na podlagi Cayleyjevih grafov neke grupe. Ker je izvorna grupa vložljiva v njihovo grupo avtomorfizmov, se lahko vprašamo, kdaj ti dve grupi sovpadata (Cayleyjev zemljevid tedaj imenujemo zemljevidna regularna predstavitev ali ZPR), in s kakšno verjetnostjo se to zgodi. Na prvo vprašanje je odgovoril Jajcay. V tem članku obravnavamo verjetnostno različico in dokažemo, da se s povečevanjem grup delež zemljevidnih regularnih predstavitev med vsemi Cayleyjevimi zemljevidi približuje 1.

Ključne besede: Regularna predstavitev, Cayleyjev zemljevid, grupa avtomorfizmov, asimptotska enumeracija, grafovska regularna predstavitev, GRP.

Math. Subj. Class. (2020): 05C25, 05C30, 20B25, 20B15

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