

Splittable and unsplittable graphs and configurations*

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Abstract

We prove that there exist infinitely many splittable and also infinitely many unsplitable cyclic (n_3) configurations. We also present a complete study of trivalent cyclic Haar graphs on at most 60 vertices with respect to splittability. Finally, we show that all cyclic flag-transitive configurations with the exception of the Fano plane and the Möbius-Kantor configuration are splittable.

Keywords: Configuration of points and lines, unsplitable configuration, unsplitable graph, independent set, Levi graph, Grünbaum graph, splitting type, cyclic Haar graph.

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Razcepni in nerazcepni grafi in konfiguracije*

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Povzetek

Dokažemo, da obstaja neskončno mnogo razcepnih in neskončno mnogo nerazcepnih (n_3) konfiguracij. Podamo tudi popolno obravnavo trivalentnih cikličnih Haarovih grafov z največ 60 vozlišči glede na razcepnost. Na koncu pokažemo, da so vse praporno tranzitivne konfiguracije, razen Fanove ravnine in Möbius-Kantorjeve konfiguracije, razcepne.

Ključne besede: Konfiguracija točk in premic, nerazcepna konfiguracije, nerazcepni graf, neodvisna množica vozlišč, Levijev graf, Grünbaumov graf, razcepni tip, ciklični Haarov graf.

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