

Povzetek

Namen tega dela je prikazati prispevek madžarskega matematika Babaija k problemu ocene reda primitivne permutacijske grupe v odvisnosti od njene stopnje. Začetki tega problema segajo že v prejšnje stoletje. Babai je dokazal, da za primitivno grupo G stopnje n , ki ni 2-tranzitivna, velja

$$|G| < \exp(4\sqrt{n} \log^2 n).$$

Iz primerov bomo videli, da se da ta rezultat izboljšati kvečjemu za faktor $\log n$.

V dokazu bomo uporabljali nekatere lastnosti koherentnih konfiguracij.

Math. class. sub. 20B15, 05B30.

Key words: uniprimitive permutation groups, coherent configurations.

Literatura

- [1] BABAI, Lazslo, On the coplexity of canonocal labeling of strongly regular graphs, *SIAM J.Computing* 9 (1980), 212-216.
- [2] BABAI, L., On the order of uniprimitive permutation groups, *Ann. of Math.* 113 (1981), 553-568.
- [3] BABAI, L., On the order of doubly tranzitive permutation groups, *Invent. math.* 65 (1982), 473-484.
- [4] BABAI, L., P. J. CAMERON and P. P. PALFY, On the orders of primitive groups with restricted nonabelian compositional factors, *Journal of algebra* 79 (1982), 161-168.
- [5] BERGE, Graphes et Hypergraphes
- [6] BOCHERT, A., Uber die Zahl der verschiendenen Werthe, die eine Function gegebener Buchstaben durh Vertauschung derselben erlagen kann, *Math. Ann* 33, 584-590 (1889).
- [7] CAMERON, P. J., Finite permutation groups and finite simple groups, *Bull. London Math. Soc.* 13 (1981), 1-22.
- [8] CAMERON, P.J., VAN LINT, J.H., Graphs, Codes and Designs, *Lon.Mat.Soc.*, Lecture note series 43, 1980
- [9] HUBAUT, X.L., Strongly regular graphs, *Discrete Math.* 13 (1975) 357-381.
- [10] LOVASZ, L., On the ratio of optimal integral and fractional cover, *Disc. Math.* 13, 383-390.
- [11] NEUMANN, P.M., On group theory in 19th century, in preparation.
- [12] PRAEGER, Ch. E., SAXL, J., On the order of primitive permutation groups, *Bull. London Math. Soc.* 12 (1980), 303-307.
- [13] VIDAV, I., Višja matematika 2, Državna založba Slovenije, 1979.
- [14] WIELANDT, H., Finite Permutation Groups, Academic Press, New York 1964.
- [15] WIELANDT, H., Permutation groups through invariant relations, Lecture notes, Ohio State University, 1969