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Roughness in G -graphs

Comment.Math.Univ.Carolin. 61,2 (2020) 147–154.

Abstract: G -graphs are a type of graphs associated to groups, which were proposed by A. Bretto and A. Faisant (2005). In this paper, we first give some theorems regarding G -graphs. Then we introduce the notion of rough G -graphs and investigate some important properties of these graphs.

Keywords: coset; G -graph; rough set; group; normal subgroup; lower approximation; upper approximation

AMS Subject Classification: 05C25, 03E75, 03E99

REFERENCES

- [1] Badaoui M., Bretto A., Ellison D., Mourad B., *On constructing expander families of G -graphs*, Ars Math. Contemp. **15** (2018), no. 2, 425–440.
- [2] Bretto A., Faisant A., *Another way for associating a graph to a group*, Math. Slovaca **55** (2005), no. 1, 1–8.
- [3] Bretto A., Faisant A., *Cayley graphs and G -graphs: some applications*, J. Symbolic Comput. **46** (2011), no. 12, 1403–1412.
- [4] Bretto A., Faisant A., Gillibert L., *G -graphs: a new representation of groups*, J. Symbolic Comput. **42** (2007), no. 5, 549–560.
- [5] Bretto A., Gillibert L., *G -graphs for the cage problem: a new upper bound*, International Symp. on Symbolic and Algebraic Computation, ISSAC 2007, ACM, New York, 2007, pages 49–53.
- [6] Bretto A., Gillibert L., *G -graphs: an efficient tool for constructing symmetric and semisymmetric graphs*, Discrete Appl. Math. **156** (2008), no. 14, 2719–2739.
- [7] Bretto A., Jaulin C., Gillibert L., Laget B., *A new property of Hamming graphs and mesh of d -ary trees*, 8th Asian Symposium, ASCM 2007, Singapore, 2007, Lecture Notes in Artificial Intelligence, Subseries Lecture Notes in Computer Science 5081, 2008, pages 139–150.
- [8] Cayley A., *Desiderata and suggestions: No. 2. The theory of groups: graphical representations*, Amer. J. Math. **1** (1878), no. 2, 174–176.
- [9] Cayley A., *On the theory of groups*, Amer. J. Math. **11** (1889), no. 2, 139–157.
- [10] Cheng W., Mo Z.-W., Wang J., *Notes on: “The lower and upper approximations in a fuzzy group” and “Rough ideals in semigroups”*, Inform. Sci. **177** (2007), no. 22, 5134–5140.
- [11] Kuroki N., Wang P.P., *The lower and upper approximations in a fuzzy group*, Inform. Sci. **90** (1996), no. 1–4, 203–220.
- [12] Pawlak Z., *Rough sets*, Internat. J. Comput. Inform. Sci. **11** (1982), no. 5, 341–356.
- [13] Shahzamanian M.H., Shirmohammadi M., Davvaz B., *Roughness in Cayley graphs*, Inform. Sci. **180** (2010), no. 17, 3362–3372.
- [14] West D.B., *Introduction to Graph Theory*, Prentice Hall, Upper Saddle River, 1996.