

ON SUPER EDGE-ANTIMAGIC TOTAL LABELING OF SUBDIVIDED STARS¹

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Abstract

In 1980, Enomoto *et al.* proposed the conjecture that every tree is a super $(a, 0)$ -edge-antimagic total graph. In this paper, we give a partial support for the correctness of this conjecture by formulating some super (a, d) -edge-antimagic total labelings on a subclass of subdivided stars denoted by $T(n, n + 1, 2n + 1, 4n + 2, n_5, n_6, \dots, n_r)$ for different values of the edge-antimagic labeling parameter d , where $n \geq 3$ is odd, $n_m = 2^{m-4}(4n + 1) + 1$, $r \geq 5$ and $5 \leq m \leq r$.

Keywords: super (a, d) -EAT labeling, subdivision of star.

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REFERENCES

- [1] M. Bača, Y. Lin, M. Miller and M.Z. Youssef, *Edge-antimagic graphs*, Discrete Math. **307** (2007) 1232–1244.
doi:10.1016/j.disc.2005.10.038
- [2] M. Bača, Y. Lin, M. Miller and R. Simanjuntak, *New constructions of magic and antimagic graph labelings*, Util. Math. **60** (2001) 229–239.
- [3] M. Bača, Y. Lin and F.A. Muntaner-Batle, *Super edge-antimagic labelings of the path-like trees*, Util. Math. **73** (2007) 117–128.
- [4] M. Bača and M. Miller, *Super Edge-Antimagic Graphs* (Brown Walker Press, Boca Raton, Florida USA, 2008).

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- [5] H. Enomoto, A.S. Lladó, T. Nakamigawa and G. Ringel, *Super edge-magic graphs*, SUT J. Math. **34** (1998) 105–109.
- [6] J.A. Gallian, *A dynamic survey of graph labeling*, Electron. J. Combin. (2011) #DS6.
- [7] M. Hussain, E.T. Baskoro and Slamin, *On super edge-magic total labeling of banana trees*, Util. Math. **79** (2009) 243–251.
- [8] M. Javaid, M. Hussain, K. Ali and H. Shaker, *On super edge-magic total labeling on subdivision of trees*, Util. Math. **89** (2012) 169–177.
- [9] M. Javaid and A.A. Bhatti, *On super (a, d) -edge antimagic total labeling of subdivided stars*, Ars Combin. **105** (2012) 503–512.
- [10] M. Javaid, A.A. Bhatti and M. Hussain, *On (a, d) -edge-antimagic total labeling of extended w -trees*, Util. Math. **87** (2012) 293–303.
- [11] M. Javaid, M. Hussain, K. Ali and K.H. Dar, *Super edge-magic total labeling on w -trees*, Util. Math. **86** (2011) 183–191.
- [12] M. Javaid, A.A. Bhatti, M. Hussain and K. Ali, *Super edge-magic total labeling on forest of extended w -trees*, Util. Math. **91** (2013) 155–162.
- [13] A. Kotzig and A. Rosa, *Magic valuations of finite graphs*, Canad. Math. Bull. **13** (1970) 451–461.
doi:10.4153/CMB-1970-084-1
- [14] A. Kotzig and A. Rosa, *Magic Valuation of Complete Graphs* (Centre de Recherches Mathematiques, Uni. de Montreal, 1972).
- [15] S.M. Lee and Q.X. Shah, *All trees with at most 17 vertices are super edge-magic*, in: 16th MCCC Conference, Carbondale SIU (2002).
- [16] Y.-J. Lu, *A proof of three-path trees $P(m, n, t)$ being edge-magic*, College Mathematica **17(2)** (2001) 41–44.
- [17] Y.-J. Lu, *A proof of three-path trees $P(m, n, t)$ being edge-magic (II)*, College Mathematica **20(3)** (2004) 51–53.
- [18] A.A.G. Ngurah, R. Simanjuntak and E.T. Baskoro, *On (super) edge-magic total labeling of subdivision of $K_{1,3}$* , SUT J. Math. **43** (2007) 127–136.
- [19] A.N.M. Salman, A.A.G. Ngurah and N. Izzati, *On super edge-magic total labeling of a subdivision of a star S_n* , Util. Math. **81** (2010) 275–284.
- [20] K.A. Sugeng, M. Miller, Slamin and M. Bača, *(a, d) -edge-antimagic total labelings of caterpillars*, Lect. Notes Comput. Sci. **3330** (2005) 169–180.
doi:10.1007/978-3-540-30540-8_19
- [21] R. Simanjuntak, F. Bertault and M. Miller, *Two new (a, d) -antimagic graph labelings*, in: Proc. 11th Australian Workshop on Combin. Algor. **11** (2000) 179–189.
- [22] D.B. West, *An Introduction to Graph Theory* (Prentice Hall, 1996).

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