

(a, d) -edge-antimagic total labelings

The *edge-weight* of an edge xy under a labeling is the sum of labels (if present) carried by that edge and the vertices x, y incident with xy .

An (a, d) -edge-antimagic total labeling is defined as a one-to-one mapping from $V(G) \cup E(G)$ into the set $\{1, 2, \dots, |V(G)| + |E(G)|\}$ so that the set of edge-weights of all edges in G is equal to $\{a, a + d, \dots, a + (|E(G)| - 1)d\}$, for two integers $a > 0$ and $d \geq 0$.

An (a, d) -edge-antimagic total labeling g is called *super* if $g(V(G)) = \{1, 2, \dots, |V(G)|\}$ and $g(E(G)) = \{|V(G)| + 1, |V(G)| + 2, \dots, |V(G)| + |E(G)|\}$.

A graph G is called (a, d) -edge-antimagic total or super (a, d) -edge-antimagic total if there exists an (a, d) -edge-antimagic total or a super (a, d) -edge-antimagic total labeling of G .

These labelings are natural extensions of the notions of edge-magic labeling (A. Kotzig and A. Rosa, 1970, where edge-magic labeling is called *magic valuation*) and super edge-magic labeling (introduced by H. Enomoto, A.S. Lladó, T. Nakamigawa and G. Ringel, 1998).

(a, d) -edge-antimagic properties of certain classes of graphs are described in:

- Bača, M. - Muntaner-Batle, F.A. - Semaničová-Feňovčíková, A. - Shafiq, M.K.: *On super $(a, 2)$ -edge-antimagic total labeling of disconnected graphs*, **Ars Combin.** **113** (2014), 129-137.
- Arumugam, S.- Bača, M. Fronček, D.- Ryan, J.- Sugeng, K.A.: *Some open problems on graph labelings*, **AKCE J. Graphs. Combin.** **10**, No.2 (2013), 237-243.
- Rahmawati, S.- Sugeng, K.A.- Silaban, D.R. Miller, M.- Bača, M.: *Construction of new larger (a, d) -edge antimagic vertex graphs by using adjacency matrices*, **Australasian Journal of Combinatorics** **56** (2013), 257-272.
- Bača, M. - Shabbir, A.: *Total labelings of toroidal polyhexes*, **Science International** **24** Issue 3 (2012), 239-241.
- Bača, M. - Lascsáková, M. - Semaničová, A.: *On connection between alpha-labelings and edge-antimagic labelings of disconnected graphs*, **Ars Combin.** **106** (2012), 321-336.
- Bača, M. - Semaničová -Feňovčíková, A. - Shafiq, M.K.: *A method to generate large classes of edge-antimagic trees*, **Utilitas Math.** **86** (2011), 33-43.
- Dafik - Miller, M. - Ryan, J.- Bača, M.: *Super edge-antimagic total labelings of $mK(n, n, n)$* , **Ars Combin.** **101** (2011), 97-107.
- Bača, M.- Brankovic, L.: *Edge-antimagicness for a class of disconnected graphs*, **Ars Combin.** **97A** (2010), 145-152.
- Bača, M. - Kovář, P. - Semaničová -Feňovčíková, A. - Shafiq, M.K.: *On super $(a, 1)$ -edge-antimagic total labelings of regular graphs*, **Discrete Math.** **310** (2010), 1408-1412.
- Bača, M.- Barrientos, C.: *Graceful and edge-antimagic labelings*, **Ars Combin.** **96** (2010), 505-513.
- Bača, M.- Lin, Y.- Muntaner-Batle, F.A.: *Edge-antimagic labelings of forest*, **Utilitas Math.** **81** (2010), 31-40.
- Bača, M. -Lin, Y. - Muntaner-Batle, F.A.- Rius-Font, M.: *Strong labelings*

of linear forests, **Acta Math. Sinica, English Series** **25**, Issue 12 (2009), 1951-1964.

- Dafik - Miller, M. - Ryan, J.- Bača, M.: *On super (a, d) -edge-antimagic total labeling of disconnected graphs*, **Discrete Math.** **309** (2009), 4909-4915.
- Bača, M. - Dafik - Miller, M. - Ryan, J.: *Antimagic labeling of disjoint union of s -crowns*, **Utilitas Math.** **79** (2009), 193-205.
- Bača, M. - Lin, Y. -Semaničová -Feňovčíková, A.: *Note on super antimagicness of disconnected graphs*, **AKCE J. Graphs. Combin.** **6**, No.1 (2009), 47-55.
- Bača, M.- Lin, Y.- Muntaner-Batle, F.A.: *A note on even disjoint union of paths*, **AKCE J. Graphs. Combin.** **6**, No.1 (2009), 41-46.
- Dafik - Miller, M. - Ryan, J.- Bača, M.: *On antimagic labelings of disjoint union of complete s -partite graphs*, **The Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC)** **65**, (2008), 41-49.
- Bača, M. - Dafik - Miller, M. - Ryan, J.: *Edge-antimagic total labeling of disjoint union of caterpillars*, **The Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC)** **65**, (2008), 61-70.
- Sugeng, K.A.- Miller, M.- Bača, M.: *Super antimagic total labeling of graphs*, **Utilitas Math.** **76**, (2008), 161-171.
- Dafik - Miller, M. - Ryan, J.- Bača, M.: *Antimagic labeling of the union of two stars*, **Australasian Journal of Combinatorics** **42**, (2008), 35-44.
- Bača, M. - Barrientos, C.: *On super edge-antimagic total labeling of mKn* , **Discrete Math.** **308** (2008), 5032-5037.
- Bača, M.- Youssef, M.Z.: *Further results on antimagic graph labelings*, **Australasian Journal of Combinatorics** **38** (2007), 163-172.
- Bača, M.- Lin, Y.- Muntaner-Batle, F.A.: *Super edge-antimagic labelings of the path-like trees*, **Utilitas Math.** **73**, (2007), 117-128.
- Bača, M. - Lin, Y. - Miller, M. - Youssef, M.Z.: *Edge-antimagic graphs*, **Discrete Math.** **307** (2007), 1232-1244.
- Bača, M.- Baskoro, E.T.- Miller, M.- Ryan, J.- Simanjuntak, R.- Sugeng, K.A.: *Survey of edge antimagic labelings of graphs*, **Journal of Indonesian Math. Society (MIHMI)** **Vol. 12**, No. 1 (2006), 113-130.
- Sugeng, K.A. - Miller, M. - Bača, M.: *Super edge-antimagic total labelings*, **Utilitas Math.** **71** (2006), 131-141.
- Bača, M. - Baskoro, E.T. - Simanjuntak, R. - Sugeng, K.A.: *Super edge-antimagic labelings of the generalized Petersen graphs $P(n, (n - 1)/2)$* , **Utilitas Math.** **70** (2006), 119-127.
- Bača, M. - Murugan, M.: *Super edge-antimagic labeling of a cycle with a chord*, **Australasian Journal of Combinatorics** **35**, (2006), 253-261.
- Sugeng, K.A. - Miller, M. - Slamini - Bača, M.: *(a, d) -edge-antimagic total labelings of caterpillars*, **Lecture Notes in Computer Science - LNCS** **3330**, (2005), 169-180.
- Bača, M. - Lin, Y. - Miller, M. - Simanjuntak, R.: *New constructions of magic and antimagic graph labelings*, **Utilitas Math.** **60** (2001), 229-239.
- Bača, M. - MacDougall, J.A. - Miller, M. - Slamini - Wallis, W.D.: *Survey of certain valuations of graphs*, **Discussiones Math. Graph Theory** **20** (2000), 219-229.