## Bibliography

- Agarwal, R.P., Grace, S.R., Regan, D.O': Oscillation Theory for Difference and Functional Differential Equations, Kluwer Academic: Dordrecht, Boston, London, 2000.
- [2] Agarwal, R.P., Bohner, M., Li, T., Zhang, C.: Oscillation of second order differential equations with a sublinear neutral term, Carpathian Journal of Mathematics, 30 (2014), 1-6.
- [3] Atkinson, F. V.: On second order nonlinear oscillations, Pacific Journal of Mathematics, 5 (1955), 643-647.
- [4] Agarwal, R.P., Grace, S.R., Regan, D.O.: Oscillation Theory for Difference and Functional Differential Equations, Kluwer Academic, Dordrecht., 2000.
- [5] Agarwal, R.P., Baculíková, B., Dzurina, J., Li, T.: Oscillation of third order nonlinear functional differential equations with mixed arguments, Acta Mathematica Hungarica, 134 (2011), 54 - 67.
- [6] Baculíková, B.: Properties of third order nonlinear functional differential equations with mixed arguments, Abstract and Applied Analysis, 2011,(2011), 1 - 15.
- [7] Bainov, D., Mishev, D.: Oscillation Theory For Neutral Differential Equations With Delay, Adam Hilger, New York., 1991.
- [8] Baculíková, B., Džurina, J.: Oscillation of third-order nonlinear differential equations, Applied Mathematics Letters, 24 (4) (2011), 466-470.
- [9] Baculíková, B., Džurina, J.: Oscillation of third order neutral differential equations, Mathematical and Computer Modelling, 52 (2010), 215–226.

- [10] Baculíková, B., Džurina, J.: Oscillation theorems for second order neutral differential equations, Computers & Mathematics with Applications, 61 (2011), 94–99.
- [11] Baculíková, B., Džurina, J.: Oscillation theorems for third order neutral differential equations, Carpathian Journal of Mathematics, 28 (2), (2012), 199–206.
- [12] Bartušek, M., Cecchi, M., Došlá, Z., Marini M.: Oscillation for thirdorder nonlinear differential equations with deviating argument, Abstract and Applied Analysis, (2010), 1-19.
- [13] Brauer, F., Castillo-Chvez, C.: Mathematical Models in Population Biology and Epidemiology, vol. 40 of Texts in Applied Mathematics, Springer, New York, NY, USA, 2<sup>nd</sup> edition, 2012.
- [14] Bainov, D.D. and Mishev, D.P.: Oscillation Theory for Neutral Differential Equations with Delay, Adam Hilger: Bristol, Philadelphia and New York, 1991.
- [15] Bani-Yaghoub, M.: Analysis and applications of delay differential equations in biology and medicine, https://arxiv.org/abs/1701.04173.
- [16] Candan, T.: Oscillation criteria and asymptotic properties of solutions of third-order nonlinear neutral differential equations, Mathematical Methods in the Applied Sciences, 38 (7) (2015), 1379–1392.
- [17] Candan, T.: Oscillatory behavior of second order nonlinear neutral differential equations with distributed deviating arguments, Applied Mathematics and Computation, 262 (2015), 199-203.
- [18] Candan, T., Dahiya, R.S.: Oscillation of third order functional differential equations with delay, Fifth Mississippi Conference on Differential Equations and Computational Simulations, Electronic Journal of Differential Equations, 10 (2003), 79 - 88.
- [19] Candan, T., Dahiya, R.S.: Oscillation of third order functional differential equations with delay, Electronic Journal of Differential Equations: Conference, 10 (2003), 79–88.

- [20] Candan, T., Dahiya, R.S.: Functional differential equations of third order, Electronic Journal of Differential Equations: Conference, 12 (2005), 47–56.
- [21] Chatzarakis, G. E., Li, T.: Oscillation Criteria for Delay and Advanced Differential Equations with Nonmonotone Arguments, Complexity, vol. 2018, Article ID 8237634, 18 pages, 2018.
- [22] Cuimei, J., Jiang, Y., Li, T.: Asymptotic behavior of third-order differential equations with nonpositive neutral coefficients and distributed deviating arguments, Advances in Difference Equations, 2016, no. 1, (2016), 105.
- [23] Džurina, J., Thandapani, E., Tamilvanan, S.: Oscillation of solutions to third-order half-linear neutral differential equations, Electronic Journal of Differential Equations, Vol.2012, No. 29, pp. 1-9.
- [24] Erbe, L., Kong, Q., Zhang, B.G.: Oscillation Theory for Functional Differential Equations, Dekker, New York (1995).
- [25] Elabbasy, E. M. and Moaaz, O.: New oscillation results for class of third order neutral delay differential equations with distributed deviating arguments, Global Journal of Science Frontier Research: F Mathematics and Decision Sciences, 15 (2015), 19.
- [26] Erbe, L.H., Zhang, B.G.: Oscillation of first order linear differential equations with deviating arguments, Differential and Integral Equations, 1 (1988), 305-314.
- [27] Fu, Y., Tian, Y., Jiang, C., Li, T.: On the Asymptotic Properties of Nonlinear Third-Order Neutral Delay Differential Equations with Distributed Deviating Arguments, Journal of Function Spaces, vol. 2016, Article ID 3954354, 5 pages, 2016.
- [28] Fite, W.B.: Properties of the solutions of certain functional differential equations, Transactions of the American Mathematical Society, 22 (1921), 311-319.
- [29] Fu, Y., Tian, Y., Jiang, C., Li, T.: On the asymptotic properties of nonlinear third-order neutral delay differential equations with distributed deviating arguments, Journal of Function Spaces, 2016, (2016), 1-5.

- [30] Gopalsamy, K.: Stability and Oscillations in Delay Differential Equations of Population Dynamics, vol. 74 of Mathematics and Its Applications, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1992.
- [31] Grace,S.R., Agarwal,R.P., Pavani, R., Thandapani, E.: On the oscillation of certain third order nonlinear functional differential equations, Applied Mathematics and Computation, 202 (2008), 102 - 112.
- [32] Grace, S.R., Lalli, B.S.: Oscillation of solutions of nonlinear neutral second order delay differential equations, Rad. Mat.,3 (1987), 77-84.
- [33] Grace, S.R., Lalli, B.S.: Oscillation theorems for certain neutral differential equations, Proceeding of the Eleventh International Conference on Nonlinear Oscillations-Budapest., 1987
- [34] Grace, S.R., Lalli, B.S.: Oscillation and asymptotic behavior of certain second order neutral differential equations, Rad. Mat.,5 (1989), 121-126.
- [35] Graef, J.R., Grammatikopoulos, M.K., Spikes, P.W.: Asymptotic properties of solutions of nonlinear neutral delay differential equations of the second order, Rad.Mat., 4 (1988), 133-149.
- [36] Graef, J.R., Savithri, R., Thandapani, E.: Oscillatory properties of third order neutral delay differential equations, Proc. Fourth Inter. Conf. Dynamic Sys. Diff. Equs., 2002,342 - 350.
- [37] Gregus, M.: Third Order Linear Differential Equations, Reidel, Dordrecht., 1982.
- [38] Gyori, I., Ladas, G.: Oscillation Theory of Delay Differential Equations with Applications, Clarendan Press, Oxford., 1991.
- [39] Grammatikopoulos, M.K., Ladas, G., Sficas, Y.G.: Oscillation and asymptotic behavior of neutral equations with variable coefficients, Radovi Matematicki, 2 (1986),279-303.
- [40] Grammatikopoulos, M.K., Ladas, G., Meimaridou, A.: Oscillation and asymptotic behavior of higher order neutral differential equations with variable coefficients, Chinese Annals of Mathematics, 9B (3) (1988), 322-338.

- [41] Grammatikopoulos, M.K., Ladas, G., Meimaridou, A.: Oscillation of second order neutral delay differential equations, Radovi Matematicki, 1 (1985), 267-274.
- [42] Grammatikopoulos, M.K., Grove, E.A., Ladas, G.: Oscillation and asymptotic behavior of second order neutral differential equations with deviating arguments, Canadian Mathematical Society, 8 (1987), 153-161.
- [43] Grammatikopoulos, M.K., Grove, E.A., Ladas G.: Oscillation and asymptotic behavior of neutral differential equations with deviating arguments, Applicable Analysis, 22 (1986), 1-19.
- [44] Grammatikopoulos, M.K., Ladas, G., Meimaridou A.: Oscillation of second order neutral delay differential equations, Journal of Mathematical Analysis and Applications, 120 (1986), 510-520.
- [45] Grove, E.A., Kulenovic, M.R., Ladas, G.: Sufficient conditions for oscillation and nonoscillation of neutral equations, Journal of Differential Equations, 68 (1987), 373-382.
- [46] Graef, J.R., Savithri, R., Thandapani E.: Oscillatory properties of third order neutral delay differential equations, Discrete and Continuous Dynamical Systems A, 2003, 342–350.
- [47] Gyori, I., Ladas, G.: Oscillation Theory of Delay Differential Equations with Applications, Clarendan Press, Oxford., 1991.
- [48] Hale, J.: Theory of Functional Differential Equations, Springer, New York, NY, USA, 1977.
- [49] Han, Z., Li, T., Zhang, C., Sun S.: Oscillatory behavior of solutions of certain third-order mixed neutral functional differential equations, Bulletin of the Malaysian Mathematical Sciences Society, 35 (3) (2012), 611–620.
- [50] Hanan, M.: Oscillation criteria for a third order linear differential equations, Pacific Journal of Mathematics, 11 (1961), 919-944.
- [51] Hartman, P.: Non-oscillatory linear differential equations of second order, American Journal of Mathematics, 74 (1952), 389-400.

- [52] Hale, J. K.: Theory of Functional Differential Equations, Springer-Verlag, New York, 1977.
- [53] Ivanov, A.F., Kusano, T.: On the oscillation of the solutions of a class of differential-functional equations, Ukrainian Mathematical Journal, 39 (1987), 717-721.
- [54] Ivanov, A.F., Kusano,T.: Oscillation of the solutions of a class of first order differential equations of neutral type, Ukrainian Mathematical Journal, 41 (1989),1370-1375.
- [55] Jaros, J., Kusano, T.: Oscillations theory of higher order linear functional differential of neutral type, Hiroshima Math.J.,18 (1988), 509-531.
- [56] Jaros, J., Kusano, T.: oscillation properties of first order nonlinear functional differential equations of neutral type, Diff.Int. Eqns., 4 (1991), 425-436.
- [57] Jaros, J., Kusano, T.: Asymptotic behavior of nonoscillatory solutions of nonlinear functional differential equations of neutral type, Funkcialaj Ekvacioj, 32(1989), 251-263.
- [58] Jiang, C., Jiang, Y., Li, T.: Asymptotic behavior of third-order differential equations with nonpositive neutral coefficients and distributed deviating arguments, Advances in Difference Equations. 2016;(1) 1–14.
- [59] Jianga, C., Li, T.: Oscillation criteria for third-order nonlinear neutral differential equations with distributed deviating arguments, Journal of Nonlinear Sciences & Applications (JNSA), 9 (12) (2016), 6170–6182.
- [60] Jiang, Y., Jiang, C., Li, T.: Oscillatory behavior of third-order nonlinear neutral delay differential equations, Advances in Difference Equations, 2016, (2016), 1-12.
- [61] Kolmonovskii, V., Myshkis, A.: Introduction to the Theory and Applications of Functional Differential Equations, Kluwer Academic, Dordrecht, Germany, 1999.
- [62] Kiguradze I. T., Chanturia T. A.: Asymptotic Properties of Solutions of Nonautonomous Ordinary Differential Equations, Kluwer Academic, Dordrecht, The Netherlands, 1993.

- [63] Kamenev, I.V.: Integral criterion for oscillation of linear differential equations of second order, Matematicheskie Zametki, 23 (1978), 249-251.
- [64] Koplatadze, R.G., Chanturia T.A.: On the Oscillatory Properties of Differential Equations with a Deviating Argument, Tbilisi State University Press, Tbilisi, (1977), 115.
- [65] Lillo, J.C.: Oscillatory Solutions of the equation y'(x) = m(x)y(x n(x)), Journal of Differential Equations, 6 (1) (1969), 1-35.
- [66] Ladde, G.S., Lakshmikantham, V., Zhang, B.G.: Oscillation Theory of Differential Equations with Deviating Arguments, Marcel Dekker, Inc.: New York, 1987.
- [67] Ladde, G. S., Lakshmikanthan, V., Zhang, B. G.: Oscillation Theory of Differential Equations with Deviating Arguments. Marcel Dekker, New York, 1987.
- [68] Ladas, G., Sficas, Y.G.: Oscillations of neutral delay differential equations, Canadian Mathematical Bulletin, 29 (4) (1986), 438-445.
- [69] Ladas, G. and Sficas, Y.G.: Oscillations of higher order neutral equations, Journal of the Australian Mathematical Society, Series B, 27 (1986), 502-511.
- [70] Ladas, G.: Linearized oscillations for neutral equations, Proceeding of Equadiff 87, Vol 118, pp 379-387, Lecture notes in pure and Applied Mathematics, Differential equations, Marcel Dekker, New York., 1989.
- [71] Ladde, G. S., Lakshmikanthan, V., Zhang, B. G.: Oscillation Theory of Differential Equations with Deviating Arguments, Marcel Dekker, Inc. New York., 1987.
- [72] Li, T.: Comparison theorems for second-order neutral differential equations of mixed type, Electronic Journal of Differential Equations, 2010, no. 167, (2010), 1–7.
- [73] Li, T., Baculíková, B., Džurina, J.: Oscillation results for second-order neutral differential equations of mixed type, Tatra Mountains Mathematical Publications, 48 (1) (2011): 101–116.

- [74] Li, T., Zhang, C., Xing, G.: Oscillation of third-order neutral delay differential equations, Abstract and Applied Analysis, (2012), 1-11.
- [75] Li, T., Senel, M.T., Zhang, C.: Oscillation of solutions to second-order half-linear differential equations with neutral terms, Electronic Journal of Differential Equations, 229 (2013), 1–7.
- [76] Li, T., Baculíková, B., Džurina, J.: Oscillatory behavior of secondorder nonlinear neutral differential equations with distributed deviating arguments, Boundary Value Problems, 2014 (2014) 115.
- [77] Lakshmikantham, V., Bainov, D. D., Simeonov, P. S.: Theory of Impulsive Differential Equations, World Scientific, Singapore, 1989.
- [78] Lin, X., Tang, X.: Oscillation of solutions of neutral differential equations with a superlinear neutral term, Applied Mathematics Letters, 20 (2007), 1016–1022.
- [79] Myshkls, A.D.: Linear Differential Equations with Retarded Arguments, Deutsher Verlag der Wissenshaften, Berlin, 1955.
- [80] Norkin, S.B.: Second Order differential Equations with Retarted Argument, Moscow, 1965.
- [81] Parhi, N., Padhi, S.: On oscillation and asymptotic property of third order differential equations, Czechoslovak Mathematical Journal, 49 (1999), 21 -33.
- [82] Philos, Ch. G.: Oscillation theorems for linear differential equations of second order, Archiv der Mathematik (Basel), 53 (1989) 482-492.
- [83] Pinelas, S, Thandapani, E., Padmavathi, S.: Oscillation criteria for evenorder nonlinear neutral differential equations of mixed type, Bulletin of Mathematical Analysis and Applications, 6 (1) (2014), 9-22.
- [84] Philos, Ch. G.: On the existence of nonoscillatory solutions tending to zero at  $\infty$  for differential equations with positive delays, Archiv der Mathematik (Basel), 36 (1981), 168–178.

- [85] Qi, Y., Yu, J.: Oscillation of second order nonlinear mixed neutral differential equations with distributed deviating arguments, Bulletin of the Malaysian Mathematical Sciences Society, 38 (2) (2015), 543–560.
- [86] Stavroulakis, I. P.: Oscillation of mixed neutral equations, Hiroshima Mathematical Journal, 19 (1989), 441-456.
- [87] Saker, S. H., Džurina, J.: On the oscillation of certain class of third order nonlinear delay differential equations, Mathematica Bohemica, 135 (2010), 225-237.
- [88] Su, M., Xu, Z.: Oscillation criteria of certain third order neutral differential equations, Differential Equations & Applications, 4 (2012), 221-232.
- [89] Tamilvanan, S., Thandapani, E., Džurina, J.: Oscillation of second order nonlinear differential equation with sublinear neutral term, Differential Equations and Applications, 9 (1) (2016), 29–35.
- [90] Thandapani, E., Li, T.: On the oscillation of third-order quasi-linear neutral functional differential equations, Archivum Mathematicum, 47 (2011), 181-199.
- [91] Thandapani,E., Li,T.: On the Oscillation of third order quasilinear neutral functional differential equations, Archiv der Mathematik (Brno), 47 (2011),181 - 199.
- [92] Thandapani, E. and Rama, R.: Oscillatory behavior of solutions of certain third order mixed neutral differential equations, Tamkang Journal of Mathematics, 44 (1) (2013), 99–112.
- [93] Tian, Y., Cai, Y., Fu, Y., Li, T.: Oscillation and asymptotic behavior of thirdorder neutral differential equations with distributed deviating arguments, Advances in Difference Equations, 2015:267 (2015), 1-14.
- [94] Wintner, A.: A criterion of oscillatory stability, Quarterly of Applied Mathematics, 7 (1949), 115-117.
- [95] Wang, H., Chen, G., Jiang, Y., Jiang, C., Li, T.: Asymptotic behavior of thirdorder neutral differential equations with distributed deviating arguments, Journal of Mathematics and Computer Science, 179(2017), 194–199.

- [96] Xu, Z., Weng, P.: Oscillation of second-order neutral equations with distributed deviating arguments, Journal of Computational and Applied Mathematics, 202 (2007), 460-477.
- [97] Ye, L., Xu, Z.: Interval oscillation of second order neutral equations with distributed deviating argument, Advances in Dynamical Systems and Applications (ADSA), 1 (2006), 219-233.
- [98] Yu, Y., Fu, X.: Oscillation of second order neutral equation with continuous distributed deviating argument, Radovi Matematicki, 7 (1991), 167-176.
- [99] Zahariev, A.Z., Bainov, D.: Oscillatory properties of the solutions of a class of neutral functional differential equations, Bulletin of the Australian Mathematical Society, 22 (1980), 365 - 372.
- [100] Zahariev, A.I., Bainov, D.D.: Integral averaging and oscillation of the solutions of neutral type functional differential equations, Tamkang Journal of Mathematics, 19 (1988),61-67.
- [101] Zahariev, A.I., Bainov, D.D.: On some oscillation criteria for a class of neutral type functional differential eq equations, Journal of the Australian Mathematical Society, Series B, 28 (1986), 229-239.
- [102] Zhang, B.G.: Oscillation of first order neutral functional equations, Journal of Mathematical Analysis and Applications, 139 (1989),311-318
- [103] Zhang, C., Baculíková, B., Džurina, J., Li, T.: Oscillation results for second-order mixed neutral differential equations with distributed deviating arguments, Mathematica Slovaca, 66 (3) (2016), 615–626.
- [104] Zhang, Q., Gao, L., Yu, Y.: Oscillation criteria for third-order neutral differential equations with continuously distributed delay, Applied Mathematics Letters, 25 (2012), 1514-1519.
- [105] Zhang, C., Şenel, M.T., Li, T.: Oscillation of second-order half-linear differential equations with several neutral terms, Journal of Applied Mathematics and Computing, 44 (1-2) (2014), 511–518.