

ANFIS does not present a response that is so close to reality, it follows the form of expected output.

For presenting promising results, this work could be used in future studies of harmonic load flow for distribution networks, with the great advantage of being able to model more precise patterns using a prediction of harmonic states of loads connected to low voltage, which helps in the creation of pseudo-measures for distribution networks, where real measurements are difficult and costly to obtain.

References

- [1] IEEE Std 519-1992 – IEEE recommended practices and requirements for harmonic control in electric power systems. Institute of Electrical and Electronics Engineers, Inc
- [2] IEC 61000-3-6 – Electromagnetic compatibility (EMC) – part 3-6: limits – assessment of emission limits for the connection of distorting installations to MV, HV and EHV power systems. Edition 2.0. 2008
- [3] ANEEL Módulo 8 – Procedimentos de Distribuição de Energia Elétrico Sistema Elétrico Nacional – PRODIST. 2007.
- [4] MANITO, A. R. A.; BEZERRA, U. H.; EMÍLIA, M.; TOSTES, D. L.; SOARES, T. M. Estimação da Contribuição de Cargas Não Lineares na Distorção Harmônica de Tensão de um Barramento de Interesse do Sistema Elétrico Utilizando Rede Neural Artificial. Simpósio Brasileiro de Sistemas Elétricos – SBSE, Foz do Iguaçu – PR, 2014.
- [5] Santos, I.N., Oliveira, J.C.: ‘Modified superposition method for assignment of responsibilities on harmonic distortion’. Proc. of 2011 11th Int. Conf. on Electrical Power Quality and Utilization, 2011, pp. 1–5
- [6] de Andrade, G.V. Jr., Naidu, S.R., Neri, M.G.G., et al.: ‘Estimation of the utility’s and consumer’s contribution to harmonic distortion’, IEEE Trans. Instrum. Meas., 2009, 58, (11), pp. 3817–3823
- [7] Li, C., Xu, W., Tayjasanant, T.: ‘A ‘critical impedance’-based method for identifying harmonic sources’, IEEE Trans. Power Deliv., 2004, 19, (2), pp. 671–678
- [8] Xu, W., Liu, X., Liu, Y.: ‘An investigation on the validity of power-direction method for harmonic source determination’, IEEE Trans. Power Deliv., 2003, 18, (1), pp. 214–219
- [9] Xu, W., Liu, Y.: ‘A method for determining customer and utility harmonic contributions at the point of common coupling’, IEEE Trans. Power Deliv., 2000, 15, (2), pp. 804–811
- [10] Swart, P.H.: ‘On techniques for localization of sources producing distortion in three-phase network’, Eur. Trans. Electr. Power Eng., 1996, 6, (6), pp. 391–396
- [11] Cristaldi, L.: ‘Harmonic power flow analysis for the measurement of the electric power quality’, IEEE Trans. Instrum. Meas., 1995, 44, (3), pp. 683–685
- [12] Pfajfar, T., Blazic, B., Papic, I.: ‘Harmonic contributions evaluation with the harmonic current vector method’, IEEE Trans. Power Deliv., 2008, 23, (1), pp. 425–433
- [13] Nino, E.E., Xu, W.: ‘Measurement of harmonic sources in three-wire single-phase supply systems’, IEEE Trans. Power Deliv., 2007, 22, (4), pp. 2527–2533
- [14] Davis, E.J., Emanuel, A.E., Pileggi, D.J.: ‘Harmonic pollution metering: theoretical considerations’, IEEE Trans. Power Deliv., 2000, 15, (1), pp. 19–23
- [15] Unsar, O., Salor, O., Cadirci, I., et al.: ‘Identification of harmonic current contributions of iron and steel plants based on time-synchronized field measurements – part I: at PCC’, IEEE Trans. Ind. Appl., 2014, 50, (6), pp. 4336–4347
- [16] Unsar, O., Salor, O., Cadirci, I., et al.: ‘Identification of harmonic current contributions of iron and steel plants based on time-synchronized field measurements – part II: inside plants’, IEEE Trans. Ind. Appl., 2014, 50, (6), pp. 4348–4355
- [17] Yin, Z., Sun, Y., YU, T.: ‘New methods exploration for harmonic source identification technologies’. Fourth Int. Conf. on Electric Utility Deregulation and Restructuring and Power Technologies (DRPT), July 2011, pp. 399–402
- [18] Mazin, H.E., Xu, W., Huang, B.: ‘Determining the harmonic impacts of multiple harmonic-producing loads’, IEEE Trans. Power Deliv., 2011, 26, (2), pp. 1187–1195
- [19] Farhoodnea, M., Mohamed, A., Shareef, H., et al.: ‘An improved method for determining contribution of utility and customer harmonic distortions in a power distribution system’, Int. J. Electr. Eng. Inf., 2010, 2, (3), pp. 204–215
- [20] CIGRE Working Group 36.05/CIRE2: ‘Review of methods for measurement and evaluation of the harmonic emission level from an individual distorting load’. WGCC02, January 1999
- [21] SHAW, Ian S.; SIMÕES, Marcelo Godoy. Controle e Modelagem FUZZY. Ed. Edgard Blücher LTDA. 1ª Edição.
- [22] Fuzzy Logic Toolbox User’s Guide, 1998 by The MathWorks, Inc.
- [23] Li-Xin Wang, A Course in Fuzzy Systems and Control, 1997 by Prentice Hall, Inc.
- [24] Tostes, M. E. L.; ‘Avaliação de Impactos na Rede de Distribuição Causados pela geração de Harmônicos em Consumidores em baixa Tensão’; Tese de Doutorado Defendida em Dezembro de 2003, Curso de pós – Graduação em Engenharia Elétrica da Universidade Federal do Pará