

A Review on Finite Impulse Response and Infinite Impulse Response Filter Combined Circuit

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Abstract: *Filters are electronic circuits which used in many applications. Basically filters are circuit of linear type. This is work on the principle of removing the noisy signal, interference in input signal and unwanted distortion from the signal. it is widely used in electronics devices and circuits to improve efficiency related to removing noisy signals and unwanted interference and distortion in noisy signals filters are vital parts of electronics devices various types of filters are found in electronics devices which work on the principle of reducing noise in signals and removed unwanted signals from the channels. In this paper we Review FIR and IIR filters with top level architecture of the combined FIR and IIR filters which used in circuit for remove noise in communication devices and improved efficiency.*

Keywords: *Combined IIR and FIR Filters, FIR, IIR, Adaptive control, speech enhancement, Adaptive Filter, noise reduction*

REFERENCES

- [1]. J. Feng, B. Zeng, D. Zhao, G. Wu, Z. Liu and J. Zhang, "Evaluating Demand Response Impacts on Capacity Credit of Renewable Distributed Generation in Smart Distribution Systems," *IEEE Access*, vol. 6, pp. 14307-14317, 2018.
- [2]. A. Qazi, F. Hussain, N. A. Rahim, G. Hardaker, D. Alghazzawi, K. Shaban and K. Haruna, "Towards Sustainable Energy: A Systematic Review of Renewable Energy Sources, Technologies, and Public Opinions," *IEEE Access*, vol. 7, pp. 63837-63851, 2019.
- [3]. O. Ogunrinde, E. Shittu and K. K. Dhanda, "Investing in Renewable Energy: Reconciling Regional Policy with Renewable Energy Growth," *IEEE Engg. Manag. Rev.*, vol. 46, no. 4, pp. 103-111, Dec. 2018.
- [4]. F. Katiraei and J. R. Agüero, "Solar PV Integration Challenges," *IEEE Pow.Ener. Mag.*, vol. 9, no. 3, pp. 62-71, May-June 2011.
- [5]. B. Singh, Chandra, and K. Al-Hadad, 'Power Quality: Problems and Mitigation Techniques', John Wiley & Sons Ltd., U. K., 2015.
- [6]. R. I. Bojoi, L. R. Limongi, D. Roiu and A. Tenconi, "Enhanced Power Quality Control Strategy for Single-Phase Inverters in Distributed Generation Systems," *IEEE Trans. Power Elect.*, vol. 26, no. 3, pp. 798-806, 2011.
- [7]. B. Byman, T. Yarborough, R. Schnorr Von Carolsfeld and J. Van Gorp, "Using distributed power quality monitoring for better electrical system management," *IEEE Trans. Ind. Appl.*, vol. 36, no. 5, pp. 1481-1485, Sept.- Oct. 2000.
- [8]. J. Chandrasekar, L. Liu, D. Patt, P. P. Friedmann and D. S. Bernstein, "Adaptive Harmonic Steady-State Control for Disturbance Rejection," *IEEE Trans. Control Sys. Tech.*, vol. 14, no. 6, pp. 993-1007, 2006.
- [9]. P. Zanchetta, M. Degano, J. Liu and P. Mattavelli, "Iterative Learning Control With Variable Sampling Frequency for Current Control of Grid-Connected Converters in Aircraft Power Systems," *IEEE Trans. Ind. Appl.*, vol. 49, no.4, pp. 1548-1555, 2013.
- [10]. I. Chung, W. Liu, D. A. Cartes, E. G. Collins and S. Moon, "Control Methods of Inverter-Interfaced Distributed Generators in a Microgrid System," *IEEE Trans. Ind. Appl.*, vol. 46, no. 3, pp. 1078-1088, 2010.
- [11]. H. R. Baghaee, M. Mirsalim, G. B. Gharehpetian and H. A. Talebi, "A Decentralized Power Management and Sliding Mode Control Strategy for Hybrid AC/DC Microgrids including Renewable Energy Resources," *IEEE Trans. Indus. Infor., Early Access*, 2020.

- [12]. H. R. Baghaee, M. Mirsalim, G. B. Gharehpetian and H. A. Talebi, "Decentralized Sliding Mode Control of WG/PV/FC Microgrids Under Unbalanced and Nonlinear Load Conditions for On- and Off-Grid Modes," *IEEE Systems Journal*, vol. 12, no. 4, pp. 3108-3119, Dec. 2018.
- [13]. A. Parida and B. Subudhi, "Modified leaky LMS-based control strategy for reliable operation of single-stage three-phase grid-tied PV system," *IET Renew. Pow. Gen.*, vol. 14, no. 9, pp. 1453-1462, 2020.
- [14]. V. N. Kumar, N. Babu P., R. Kiranmayi, P. Siano and G. Panda, "Improved Power Quality in a Solar PV Plant Integrated Utility Grid by Employing a Novel Adaptive Current Regulator," *IEEE Systems Journal*, vol. 14, no. 3, pp. 4308-4319, 2020.
- [15]. J. Matas, H. Martín, J. de la Hoz, A. Abusorrah, Y. Al-Turki and H. Alshaeikh, "A New THD Measurement Method With Small Computational Burden Using a SOGI-FLL Grid Monitoring System," *IEEE Trans. Power Elect.*, vol. 35, no. 6, pp. 5797-5811, 2020.
- [16]. Y. Sun, S. Li, B. Lin, X. Fu, M. Ramezani and I. Jaithwa, "Artificial Neural Network for Control and Grid Integration of Residential Solar Photovoltaic Systems," *IEEE Trans. Sust. Energy*, vol. 8, no. 4, pp. 1484-1495, Oct. 2017.
- [17]. Y. Sun and S. Signell, "Implementation of generalized uniform Bandpass Sampling with complex FIR and IIR Filtering," *Proc. European Conf. on Circuit Theory and Design*, pp. 476-479, 2007.
- [18]. P. Shukl and B. Singh, "Combined IIR and FIR Filter for Improved Power Quality of PV Interfaced Utility Grid," *Proc. Inter. Conf. on Computing, Power and Comm. Technologies*, pp. 995-1000, 2019.
- [19]. IEEE Recommended Practices and Requirements for Harmonic Control on Electric Power System, IEEE Standard 519, 2014.
- [20]. N. Kumar, I. Hussain, B. Singh and B. K. Panigrahi, "Normal Harmonic Search Algorithm- Based MPPT for Solar PV System and Integrated with Grid Using Reduced Sensor Approach and PKNLMS Algorithm," *IEEE Trans. Indus. Appl.*, vol. 54, no. 6, pp. 6343-6352, Nov.-Dec. 2018.
- [21]. S. K. Kollimalla and M. K. Mishra, "Variable Perturbation size adaptive P&O MPPT algorithm for sudden changes in irradiance," *IEEE Trans. Sust. Energy*, vol. 5, no. 3, pp. 718-728, Jul. 2014.
- [22]. P. Shah and B. Singh, "Low-Voltage Ride-Through Operation of Grid Interfaced Solar PV System Enabling Harmonic Compensation Capabilities", *IET Renew. Power Gen., Early Access*, 2019.