DOI: <https://doi.org/10.15407/techned2018.04 . 098>

DECOMPOSITION ANALYSIS OF ACTIVE POWER OSCILLATIONS IN THE IPS OF UKRAINE

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	No 4, 2018 (July/August)
Pages	98 – 101

Authors

V. Avramenko*, **O. Martyniuk****

Institute of Electrodynamics National Academy of Sciences of Ukraine,
pr. Peremohy, 56, Kyiv, 03057, Ukraine,
e-mail: avr@ied.org.ua

* ORCID ID : <http://orcid.org/0000-0002-6068-1237>

** ORCID ID : <http://orcid.org/0000-0002-5278-4789>

Abstract

A method is proposed and investigated for decomposition analysis of active power oscillations in the IPS of Ukraine using harmonic functions with exponentially changing amplitude to determine steady state stability level of EPS.. On the example of IPS section West-Winnitsa the analysis of possibility of low-frequency oscillations origin is executed, using numerical integration of non-linear EPS dynamics equations, for obtaining transient processes in EPS after small finite disturbance. References 6, figures 2, table 1.

Key words: approximation model, low-frequency oscillations, harmonic functions, electric power system, steady state stability.

Received: 03.02.2018

Accepted: 16.04.2018

Published:

References

1. Butkevych O.F., Chyzhevskiy V.V. Real – time identification of flow – frequency oscillations of power system`s mode parameters. *Tekhnichna Elektrodynamika*. 2014. No 4. Pp. 35-37. (Ukr)
2. Pavlovskiy V., Lukianenko L., Lenga O., Lambillon V., Rese L. Analysis of Electromechanical Oscillation in the IPS of Ukraine using Eurostag and Digsilent Powerfactory Software Tools. *Tekhnichna Elektrodynamika*. 2015. No 5. C. 42-51.
3. Prasertwong K., Mirthulananthan N., Thakur D. Understanding low frequency oscillation in power systems. *International Journal of Electrical Engineering Education*. 2010. Vol. 47. No 3. Pp. 248–262. DOI: <https://doi.org/10.7227/IJEEE.47.3.2>
4. UCTE. Final Report – System Disturbance on 4 November 2006. URL: https://www.entsoe.eu/fileadmin/user_upload/library/publications/ce/otherreports/Final-Report-20070130.pdf (available at 25.12.2017)
5. Avramenko V., Martyniuk O., Hurieieva T. Study of Amplitude-Frequency Spectra of Active Power through Power System Transmission Lines. *Tekhnichna Elektrodynamika*. 2015. No 3. Pp. 48-51. (Ukr)
6. Avramenko V., Pryhno V., Martyniuk O., Yunieieva N. Adaptive means of ensuring stability and vitality of united power system of Ukraine. Kyiv: Print-line. 2016. 100 p. (Ukr)

[PDF](#)