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Precise fiber optic time and frequency transfer in relation GUM-AOS (420 km)

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[optical fibers transfer of time and frequency](#)

Abstract

The article presents the latest results of research conducted at GUM and AOS, and in close cooperation with AGH, on the precise transfer of time and frequency through optical fibers based on an operational fiber optic link with delay stabilization launched between GUM and AOS, with a total optical length of about 420 km.

Bibliography

- [1] Ł. Śliwczyński, P. Krehlik, A. Czubla, Ł. Buczek, M. Lipiński: Dissemination of time and RF frequency via stabilized fiber optic link over the distance of 420 km. *Metrologia*, vol. 50 (2012), p. 133.
- [2] Ł. Śliwczyński, P. Krehlik, Ł. Buczek, M. Lipiński: Active propagation delay stabilization for fiber optic frequency distribution using controlled electronic delay lines. *IEEE Trans. on Instrum. and Meas.*, vol. 60 (2011), p. 1480.
- [3] P. Krehlik, Ł. Śliwczyński, Ł. Buczek, M. Lipiński: Fiber optic joint time and frequency transfer with active stabilization of the propagation delay. *IEEE Trans. on Instrum. and Meas.*, vol. 61 (2012), p. 2844.
- [4] Ł. Śliwczyński, P. Krehlik, Ł. Buczek, M. Lipiński: Frequency transfer in electronically stabilized fiber optic link exploiting bidirectional optical amplifiers. *IEEE Trans. on Instrum. and Meas.*, vol. 61 (2012), p. 2573.
- [5] A. Czubla, J. Konopka, M. Górnik, W. Adamowicz, J. Struś, J. Romsicki, M. Lipiński, P. Krehlik, Ł. Śliwczyński, A. Wolczko: Dwukierunkowa transmisja sygnałów czasu poprzez światłowód. *PAK*, vol. 53 bis (2007), nr 9, s. 289.
- [6] A. Czubla, R. Osmyk, P. Szterk: Porównanie transferu czasu metodą GPS CV i metodą dwukierunkową z zastosowaniem włókien światłowodowych. *PAK*, vol. 56 (2010), s. 1012.
- [7] A. Czubla, Ł. Śliwczyński, P. Krehlik, Ł. Buczek, M. Lipiński, J. Nawrocki: Stabilization of the propagation delay in fiber optics in

a frequency distribution link using electronic delay lines: first measurement results. Proc. of PTTI (2010), p. 389.

[8] Ł. Śliwczyński, P. Krehlik, Ł. Buczek, M. Lipiński, J. Kołodziej: Fiber optic RF frequency transfer on the distance of 480 km with active stabilization of the propagation delay. Proc. of EFTF, Göteborg (2012), p. 424.

[9] A. Czubla, R. Osmyk, P. Szterk, W. Adamowicz, M. Marszalec, Ł. Śliwczyński: Optical Fiber Time and Frequency Transfer inside Urban Telecom Network in Warsaw – Results of Initial Tests. Proc. of EFTF, Göteborg (2012), p. 371.

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