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Tomographic and entropic analysis of modulated signals*

© A.S. Mastiukova^{1,2}, M.A. Gavreev^{1,2}, E.O. Kiktenko^{1,2,3}, and A.K. Fedorov^{1,4}

¹ Russian Quantum Center,
143025 Skolkovo, Moscow, Russia

² Moscow Institute of Physics and Technology,
141700 Dolgoprudny, Moscow Region, Russia

³ Department of Mathematical Methods for Quantum Technologies,
Steklov Mathematical Institute of Russian Academy of Sciences,
119991 Moscow, Russia

⁴ Moscow Institute of Physics and Technology,
141700 Dolgoprudny, Moscow Region, Russia

e-mail: a.mastiukova@rqc.ru, m.gavreev@rqc.ru, e.kiktenko@rqc.ru, akf@rqc.ru

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We study an application of the quantum tomography framework for the time-frequency analysis of modulated signals. In particular, we calculate optical tomographic representations and Wigner-Ville distributions for signals with amplitude and frequency modulations. We also consider time-frequency entropic relations for modulated signals, which are naturally associated with the Fourier analysis. A numerical toolbox for calculating optical time-frequency tomograms based on pseudo Wigner-Ville distributions for modulated signals is provided.

Keywords: quantum tomography, signal processing, Wigner-Ville distribution.

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