


На английском языке:

University	Peter the Great St. Petersburg Polytechnic University
Level of English proficiency	Upper-Intermediate (B2)
Educational program and field of the educational program for which the applicant will be accepted	PHYSICAL SCIENCES & TECHNOLOGY 2.2.13 Radio engineering, including television systems and devices ENGINEERING & TECHNOLOGY 2.2.13 Radio engineering, including television systems and devices
List of research projects of the potential supervisor (participation/leadership)	Digital synthesis of optimal signals based on the eigenfunctions of bandwidth-limited cores to increase the throughput of data transmission channels to Shannon boundaries
List of the topics offered for the prospective scientific research	<ul style="list-style-type: none"> Improving the spectral efficiency of optimal FTN signals. Improving the energy efficiency of optimal signals for 5G networks. Improving the efficiency of information transmission systems in conditions of limited signals on the transmitting device, including non-linear ones.
 <p>Research supervisor: Zavjalov Sergey, Doctor of Science (<i>place of thesis defence – St. Petersburg state university of economics</i>)</p>	<i>1.02. Computer and information sciences</i>
	Supervisor's research interests
	Application of spectrally efficient signals for advanced information transmission systems in conditions of limited frequency resources.
	Research highlights
	Spectrally efficient single-frequency FTN signals. Spectrally effective multifrequency signals.
Supervisor's specific requirements:	
Digital logistics platforms Smart supply chain Trading business Phygital service	
Supervisor's main publications	
1) Solomitckii, D., Barneto, C.B., Turunen, M., Allen, M., Zhabko, G.P., Zavjalov, S.V., Volvenko, S.V., Valkama, M. Millimeter-Wave Radar Scheme with Passive Reflector for Uncontrolled Blind Urban Intersection (2021) IEEE Transactions on Vehicular Technology, 70 (8), art. no. 9468972, pp. 7335-7346. DOI: 10.1109/TVT.2021.3093822	

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| | <p>2) Makarov, S.B., Liu, M., Ovsyannikova, A.S., Zavjalov, S.V., Lavrenyuk, I., Xue, W., Xu, Y. A reduction of peak-to-average power ratio based faster-than-nyquist quadrature signals for satellite communication (2021) <i>Symmetry</i>, 13 (2), art. no. 346, pp. 1-19. DOI: 10.3390/sym13020346</p> <p>3) Sadovaya, Y., Zavjalov, S.V. Dedicated short-range communications: Performance evaluation over mmwave and potential adjustments (2020) <i>IEEE Communications Letters</i>, 24 (12), art. no. 9166578, pp. 2733-2736. DOI: 10.1109/LCOMM.2020.3016634</p> <p>4) Makarov, S.B., Lavrenyuk, I.I., Ovsyannikova, A.S., Zavjalov, S.V. BER Performance of Finite in Time Optimal FTN Signals for the Viterbi Algorithm (2020) <i>Journal of Electronic Science and Technology</i>, 18 (1), art. no. 100022. DOI: 10.1016/j.jnlest.2020.100022</p> <p>5) Makarov, S.B., Liu, M., Ovsyannikova, A.S., Zavjalov, S.V., Lavrenyuk, I.I., Xue, W., Qi, J. Optimizing the Shape of Faster-Than-Nyquist (FTN) Signals with the Constraint on Energy Concentration in the Occupied Frequency Bandwidth (2020) <i>IEEE Access</i>, 8, art. no. 9139940, pp. 130082-130093. DOI: 10.1109/ACCESS.2020.3009213</p> |
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