

PUBLICATIONS

Kushnir A.F, Rozhkov N.M., Varypaev A.V. Statistically-based approach for monitoring of micro-seismic events. // International Journal on Geomathematics. V4. N2. pp. 201-225 .(2013). Springer. ISSN 1869-2672.
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Kushnir, A.F, Varypaev, A.V. Robustness of statistical algorithms for location of microseismic sources based on surface array data, Computational Geosciences (2017) 21: 459.
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Varypaev, A. V., & Kushnir, A. F. (2018). Algorithm of micro-seismic source localization based on asymptotic probability distribution of phase difference between two random stationary Gaussian processes. International Journal of Geomathematics,9(2), 335–358.
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Varypaev, A., Kushnir, A. Statistical synthesis of phase alignment algorithms for localization of wave field sources. Multidimensional Systems and Signal Processing (2020). <https://doi.org/10.1007/s11045-020-00722-3>
<https://link.springer.com/article/10.1007/s11045-020-00722-3>

Varypaev, A.V., Kushnir, A.F. Robust phase algorithms for estimating apparent slowness vectors of seismic waves from regional events. Comput Geosci 26, 115–129 (2022).
<https://link.springer.com/article/10.1007/s10596-021-10105-7>

Varypaev, Alexander. 2024. "Asymptotic Form of the Covariance Matrix of Likelihood-Based Estimator in Multidimensional Linear System Model for the Case of Infinity Number of Nuisance Parameters" Mathematics 12, no. 3: 473. <https://doi.org/10.3390/math12030473>

PRESENTATIONS

Kushnir A., Rozhkov M., Varypaev A. Evaluating OSI aftershock monitoring efficiency: modeling, simulation, processing, and estimation // *Poster at International Conference "Comprehensive Nuclear Test-ban Treaty: Science and Technology", Hofburg, Vienna, Austria, 8-10 June 2011.*

Kushnir A.F., Rozhkov M.V., Varypaev A., Dricker I.G. Evaluation of location capabilities of statistically optimal algorithms for microseismic monitoring // *Poster at 74 International Conference of European Association of Geophysics & Engineers, 4-7 June 2012, Copenhagen, Denmark.*

Epiphansky A.G., Kushnir A.F., Rozhkov M.V., Rozhkov N.M., Varupaev A.V., Dricker I.G., Hellman S. Enhancement of Surface Array Monitoring of Hydraulic Fracturing Based on Statistically Optimal Algorithms // *Presentation at 33-rd General Assembly of European Seismological Commission (ESC), 19 – 24 August 2012, Moscow, Russia.*

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I. Dricker, A. Kushnir, M. Rozhkov, A. Varypaev, N. Rojkov, A. Epiphansky, P. Friberg and S. Hellman
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Dricker I., Friberg P., Epiphansky A., Kushnir A., Rozhkov M., Varypaev A. Statistically Optimal Technique of Simultaneous Event Location and Focal Mechanism Determination of Weak Microseismicity Using Surface Arrays // *extended abstract, Presentation at 82-nd Annual Meeting of Society of Exploration Geophysics (SEG), 4-9 November 2012, Las Vegas, NV, USA. ISSN: 1052-3812.*

Varypaev A., Kushnir A., Sanina I., Chulkov A. Revealing the presence of the p-wave generated by weak seismic sources with complex focal mechanism using surface array data 36-th General Assembly of the European Seismological Commission, Malta, 2-7 September, 2018