

# Publications

## Books

J. Voges

**Compression of DNA Sequencing Data**

VDI Verlag, 2022

DOI: [10.51202/9783186878106-I](https://doi.org/10.51202/9783186878106-I)

## Journal Articles

H. B. Maier, A. Neyazi, G. L. Bundies, F. Meyer-Bockenamp, S. Bleich, H. Pathak, Y. Ziert, B. Neuhaus, F.-J. Müller, I. Pollmann, T. Illig, S. Mücke, M. Müller, B. K. Möller, S. Oeltze-Jafra, T. Kacprowski, J. Voges, F. Müntefering, J. Scheiber, A. Reif, M. Aichholzer, C. Reif-Leonhard, M. Schmidt-Kassow, U. Hegerl, H. Reich, S. Unterecker, H. Weber, J. Deckert, N. Bössel-Debbert, H. J. Grabe, M. Lucht, and H. Frieling

**Validation of the predictive value of BDNF -87 methylation for antidepressant treatment success in severely depressed patients – a randomized rater-blinded trial**

*Trials*, accepted for publication

DOI: [coming soon](#)

F. Müntefering, Y. G. Adhisantoso, S. Chandak, J. Ostermann, M. Hernaez, and J. Voges

**Genie: The First Open-Source ISO/IEC Encoder for Genomic Data**

*Communications Biology*, accepted for publication

DOI: [coming soon](#)

Y. G. Adhisantoso, J. Voges, C. Rohlfing, V. Tunev, J.-R. Ohm, and J. Ostermann

**GVC: efficient random access compression for gene sequence variations**

*BMC Bioinformatics*, vol. 24, no. 1, p. 121, Mar. 2023

DOI: [10.1186/s12859-023-05240-0](https://doi.org/10.1186/s12859-023-05240-0)

J. Voges, M. Hernaez, M. Mattavelli, and J. Ostermann

**An Introduction to MPEG-G: The First Open ISO/IEC Standard for the Compression and Exchange of Genomic Sequencing Data**

*Proceedings of the IEEE*, vol. 109, no. 9, pp. 1607–1622, Sep. 2021

DOI: [10.1109/JPROC.2021.3082027](https://doi.org/10.1109/JPROC.2021.3082027)

J. Voges, T. Paridaens, F. Müntefering, L. S. Mainzer, B. Bliss, M. Yang, I. Ochoa, J. Fostier, J. Ostermann, and M. Hernaez

**GABAC: an arithmetic coding solution for genomic data**

*Bioinformatics*, vol. 36, no. 7, pp. 2275–2277, Apr. 2020

DOI: [10.1093/bioinformatics/btz922](https://doi.org/10.1093/bioinformatics/btz922)

T. Laude, Y. G. Adhisantoso, J. Voges, M. Munderloh, and J. Ostermann

**A Comprehensive Video Codec Comparison**

*APSIPA Transactions on Signal and Information Processing*, vol. 8, no. 1, Nov. 2019

DOI: [10.1017/ATSIP.2019.23](https://doi.org/10.1017/ATSIP.2019.23)

Resources: [main paper](#) (PDF)

J. Voges, A. Fotouhi, J. Ostermann, and M. O. Külekci

**A Two-Level Scheme for Quality Score Compression**

*Journal of Computational Biology*, vol. 25, no. 10, pp. 1141–1151, Oct. 2018

DOI: [10.1089/cmb.2018.0065](https://doi.org/10.1089/cmb.2018.0065)

Resources: [main paper](#) (PDF)

J. Voges, J. Ostermann, and M. Hernaez

**CALQ: compression of quality values of aligned sequencing data**

*Bioinformatics*, vol. 34, no. 10, pp. 1650–1658, May 2018

DOI: [10.1093/bioinformatics/btx737](https://doi.org/10.1093/bioinformatics/btx737)

I. Numanagić, J. K. Bonfield, F. Hach, J. Voges, J. Ostermann, C. Alberti, M. Mattavelli, and S. C. Sahinalp

**Comparison of high-throughput sequencing data compression tools**

*Nature Methods*, vol. 13, no. 12, pp. 1005–1008, Dec. 2016

DOI: [10.1038/nmeth.4037](https://doi.org/10.1038/nmeth.4037)

## Patents

*Others pending*

M. Munderloh, J. Voges and J. Ostermann

**Method for compressing genomic data**

[EP3311318](#), Sep. 2023

J. Voges and J. Ostermann

**Method for encoding and decoding of quality values of a data structure**

[EP3652862](#), Jun. 2022

J. Voges and J. Ostermann

**Method for encoding and decoding of quality values of a data structure**

[US10938415](#), Mar. 2021

## Conference Papers

C. Rohlfing, T. Meyer, J. Schneider, and J. Voges

**Python Wrapper for Context-based Adaptive Binary Arithmetic Coding**

*2023 IEEE International Conference on Visual Communications and Image Processing (VCIP)*, Dec. 2023

Resources: [link](#), [main paper](#) (PDF)

I. Ochoa, H. Li, F. Baumgarte, C. Hergenrother, J. Voges, and M. Hernaez

**AliCo: A New Efficient Representation for SAM Files**

*2019 Data Compression Conference (DCC)*, pp. 93–102, Mar. 2019

DOI: [10.1109/DCC.2019.00017](https://doi.org/10.1109/DCC.2019.00017)

T. Laude, Y. G. Adhisantoso, J. Voges, M. Munderloh, and J. Ostermann

**A Comparison of JEM and AV1 with HEVC: Coding Tools, Coding Efficiency and Complexity**

*2018 Picture Coding Symposium (PCS)*, pp. 36–40, Jun. 2018

DOI: [10.1109/PCS.2018.8456291](https://doi.org/10.1109/PCS.2018.8456291)

A. A. Hernandez-Lopez, J. Voges, C. Alberti, M. Mattavelli, and J. Ostermann

**Lossy Compression of Quality Scores in Differential Gene Expression: A First Assessment and Impact Analysis**

*2018 Data Compression Conference (DCC)*, pp. 167–176, Mar. 2018

DOI: [10.1109/DCC.2018.00025](https://doi.org/10.1109/DCC.2018.00025)

A. A. Hernandez-Lopez, J. Voges, C. Alberti, M. Mattavelli, and J. Ostermann  
**Differential Gene Expression with Lossy Compression of Quality Scores in RNA-Seq Data**  
*2017 Data Compression Conference (DCC)*, p. 444, Apr. 2017  
DOI: [10.1109/DCC.2017.75](https://doi.org/10.1109/DCC.2017.75)

C. Alberti, N. Daniels, M. Hernaez, J. Voges, R. L. Goldfeder, A. A. Hernandez-Lopez, M. Mattavelli, and B. Berger  
**An Evaluation Framework for Lossy Compression of Genome Sequencing Quality Values**  
*2016 Data Compression Conference (DCC)*, pp. 221–230, Mar. 2016  
DOI: [10.1109/DCC.2016.39](https://doi.org/10.1109/DCC.2016.39)

J. Voges, M. Munderloh, and J. Ostermann  
**Predictive Coding of Aligned Next-Generation Sequencing Data**  
*2016 Data Compression Conference (DCC)*, pp. 241–250, Mar. 2016  
DOI: [10.1109/DCC.2016.98](https://doi.org/10.1109/DCC.2016.98)

## Preprints

F. Muntefering, Y. G. Adhisantoso, S. Chandak, J. Ostermann, M. Hernaez, and J. Voges  
**Genie: The First Open-Source ISO/IEC Encoder for Genomic Data**  
*Research Square*, May 2023  
DOI: [10.21203/rs.3.rs-2628031/v1](https://doi.org/10.21203/rs.3.rs-2628031/v1)

C. Alberti, T. Paridaens, J. Voges, D. Naro, J. J. Ahmad, M. Ravasi, D. Renzi, G. Zoia, P. Ribeca, I. Ochoa, M. Mattavelli, J. Delgado, and M. Hernaez  
**An introduction to MPEG-G, the new ISO standard for genomic information representation**  
*bioRxiv*, Oct. 2018  
DOI: [10.1101/426353](https://doi.org/10.1101/426353)

## Conference Talks

F. Muntefering, J. Ostermann, and J. Voges  
**BACON: Bacterial Clone Recognition from Metagenomic Sequencing Data**  
*Presented by FM (Best Presentation Award)*  
*AICPM 2023*, Sep. 2023  
Resources: [abstract](#) ([PDF](#))

Y. G. Adhisantoso, J. Voges, and J. Ostermann  
**PEKORA: High-Performance 3D Genome Reconstruction Using K-th Order Spearman's Rank Correlation Approximation**  
*Presented by YGA*  
*ISMB/ECCB 2023 (HiTSeq track)*, Jul. 2023  
Resources: [abstract](#) ([PDF](#))

## Posters

T. Paridaens, J. Voges, M. Hernaez, J. Fostier, and J. Ostermann  
**GABAC: an arithmetic coding solution for genomic data**  
*ISMB/ECCB 2019*, Aug. 2019  
DOI: [10.7490/f1000research.1117346.1](https://doi.org/10.7490/f1000research.1117346.1)

J. Voges and J. Ostermann  
**MPEG-G: The Emerging Standard for Genomic Data**  
*GCB 2017*, Sep. 2017  
DOI: [10.7287/peerj.preprints.3268v1](https://doi.org/10.7287/peerj.preprints.3268v1)

Resources: [poster \(PDF\)](#)

J. Voges, J. Ostermann, and M. Hernaez

**CALQ: compression of quality values of aligned sequencing data**

*ISMB/ECCB 2017*, Aug. 2017

DOI: [10.7490/f1000research.1114635.1](https://doi.org/10.7490/f1000research.1114635.1)