Axel Loewe’s Publications

1 Peer-reviewed Journal Articles

Forthcoming


2023


1Equal contributions by several authors are denoted by *.


2022


SPUBLICATION LIST

1 Peer-reviewed Journal Articles


2021


[j18] Alessandrini, M., Valinoti, M., Unger, L., Oesterlein, T., Dössel, O., Corsi, C., **Loewe, A.**, and


2017


2016


2014

2 Data & Software


3 Proceedings

2024


2023


2020


2019


4 Abstracts


[a110] Stary, T., Schaufelberger, M., Houillon, M., and Loewe, A. “Saving Deprecated Infrastructure: GNU/Linux-enabled Reuse of macOS Workstations”. In: deRSE24 - Conference for Research Software Engineering in Germany 2024. Würzburg. accepted.


[a89] Gerach, T. and **Loewe, A.** “Electromechanical Remodelling During Heart Failure in Dilated Cardiomyopathy: a Systematic in silico Investigation”. In: *VPH 2022 Conference Virtual Physiological Human 2022*.


[a86] Brenneisen, J., Dössel, O., and **Loewe, A.** “Influence of pressure boundary condition definition on flow patterns in cardiac simulations”. In: *iHEART Congress – Modelling the Cardiac Function*. 2022.


[a52] Nairn, D., Ye, X., Fuertinger, D. H., Kotanko, P., Loewe, A., and Raimann, J. “FP616 Low Serum Calcium is Correlated with Lower Heart Rate in Elderly Dialysis Patients”. In: Nephrology Dialysis


2016


2015


2013


5 Invited Talks

2024 (invited)

[t20] Loewe, A. “Digital chimeras to enable in silico clinical trials of ablation strategies to terminate atrial fibrillation and prevent recurrence”. In: Computational Modelling in Medicine 2024 (invited). University of Nottingham.

[t19] Loewe, A. “Digital chimeras to enable in silico trials at scale”. In: Fickle Heart: The intersection of UQ, AI and Digital Twins 2024 (invited). Cambridge, UK.


2023
[t17] Loewe, A. “Digital chimeras to enable in silico clinical trials of ablation strategies to terminate atrial fibrillation and prevent recurrence”. In: Special Semester on Mathematical Methods in Medicine, Johann Radon Institute for Computational and Applied Mathematics 2023. Linz, Austria.


2022


2021
[t10] Loewe, A. “Computational Cardiac Modeling - Synergies with Machine Learning”. In: Cardiac Electromechanics Research Group (Prof. Niederer / Bishop), King’s College London 2021. London, UK.


2019
2017
[15] Loewe, A. “Validation upside down - In-silico models to sound the potential and limitations of diagnostic tools”. In: TRM Forum 2017. Lugano, Switzerland.
2016
[14] Loewe, A. “Multiscale computational cardiology”. In: Computational Physiopathology Unit (Prof. Stefano Severi), University of Bologna 2016. Bologna, Italy.
2014

6 Patents


7 Public Outreach / Popular Science


[o9] KIT im Rathaus. “Mein digitaler Zwilling: Welche Möglichkeiten eröffnen mathematische Computermodelle des Herzens für die Diagnose und Therapie von Herzkrankheiten?” YouTube 2022. URL: https://www.youtube.com/watch?v=iLLlXTmFFM&list=PL0TmH52ybqIfnLU0b1TKz8qCuEJyRNJk&index=3.

[o8] Renal Research Institute, Frontiers in Kidney Medicine and Biology. “What ECG can tell us about the events on a molecular scale”. YouTube 2022. URL: https://www.youtube.com/watch?v=g75nZ0wISM.

AXEL LOEWE’S PUBLICATION LIST

8 Book Chapters and Monographs

2022


2021

2016

2013

2010
[b1] Loewe, A. “Comparison of cardiac simulation tools regarding the modeling of acute ischemia”. Bachelor Thesis. Karlsruhe Institute of Technology (KIT).

See CV for further dissemination and outreach activities.
9 Reviewer Activity

9.1 Funding Agencies

- Bayerisches Staatsministerium für Wissenschaft und Kunst
- Belgian Physical Society
- British Heart Foundation
- Czech Academy of Sciences, member of evaluation panel “Engineering and Technology”
- Deutsche Forschungsgemeinschaft
- Dutch Heart Foundation
- Dutch Research Council (NWO)
- Fondazione Leonardo
- Heart Research UK
- Medical Research Council, United Kingdom
- National Science Center, Poland
- Swiss National Science Foundation
- UKRI Engineering and Physical Sciences Research Council
- Wellcome Trust

9.2 Scientific Journals and Conferences

- American Journal of Physiology - Heart and Circulatory Physiology (2023)
- Annals of Biomedical Engineering (2019-20)
- Biomechanics and Modeling in Mechanobiology (2020, 2023)
- Biomedizinische Technik Conference (Annual Meeting of the German Society for Biomedical Engineering) (2022-23)
- Biophysical Journal (2019, 2022)
- BMC Medical Research Methodology (2023)
- BMC Nephrology (2021)
- Cardiology Research and Practice (2021)
- Cardiovascular Engineering and Technology (2021)
- Cardiovascular Research (2018, 2022-23)
- Circulation: Arrhythmia and Electrophysiology (2021)
- Clinical Medicine Insights Cardiology (2019)
- Computers in Biology and Medicine (2018-21)
- Computing in Cardiology Conference (2017-23)
- eLIFE (2021)
- Engineering with Computers (2022)
- Europace (2016-21, 2023)
- European Heart Journal (2022)
- European Heart Journal - Digital Health (2023)
- Expert Systems with Applications (2022)
- Frontiers in Cardiovascular Medicine (2020, 2022)
• Frontiers in Physiology (2017, 2019-23)
• Functional Imaging and Modeling of the Heart Conference (2023)
• Heart Rhythm (2017-19, 2022-23)
• Heart Rhythm Society Annual Meeting (2023-24)
• Heliyon (2023)
• IEEE Journal of Biomedical and Health Informatics (2023)
• IEEE Transactions on Automation Science and Engineering (2022)
• IEEE Transactions on Biomedical Engineering (2016, 2019-21, 2023)
• IEEE Transactions on Medical Imaging (2022)
• Interface Focus (2023)
• International Journal of Clinical Cardiology (2017)
• International Journal for Numerical Methods in Biomedical Engineering (2022)
• JACC Clinical Electrophysiology (2021-22)
• Journal of Cardiovascular Electrophysiology (2021-22)
• Journal of Computational Physics (2021)
• Journal of Open Source Software (2021-22)
• Journal of the American Heart Association (2023)
• Mathematics (2022)
• Medical and Biological Engineering and Computing (2016-17, 2019)
• Medical Image Analysis (2020-21, 2023)
• Nature Cardiovascular Research (2023)
• Pflügers Archiv - European Journal of Physiology (2023)
• Platform for Advanced Scientific Computing (PASC) Conference (2021)
• Philosophical Transactions of the Royal Society A (2019-20)
• Physiological Reports (2022)
• PLOS Computational Biology (2017, 2019)
• PLOS ONE (2019)
• Scientific Reports (2023)
• Simulation: Transactions of the Society for Modeling and Simulation (2018)
• Wellcome Open Research (2022)
• Workshop Biosignale (2022, 2024)

9.3 Universities

• Ghent University (2021)
• KIT Department of Mathematics (2022)
• KIT Department of Electrical Engineering and Information Technology (2020-2022)
• Politecnico di Milano (2021)
• Università degli Studi di Milano (2022)
• University of Auckland (2023)
Axel Loewe’s Supervisions

10 Supervised PhD Students


• Barrios Espinosa, C.A., expected 2024
• Martinez Diaz, L.P ., expected 2024
• Martínez Antón, C., expected 2024
• Krauß, J., expected 2025
• Steyer, J.F ., expected 2025
• Tenbrink, L., expected 2025
• Götz, C., expected 2026
• Linder, M. expected 2026
• Appel, S. expected 2027
• Becker, S. expected 2027
11 Supervised and Refereed Student Theses


