Axel Loewe’s Publications

1 Peer-reviewed Journal Articles

Forthcoming


2021


1Equal contributions by several authors are denoted by *.


[j26] Pilia, N., Severi, S., Raimann, J. G., Genovesi, S., Dössel, O., Kotanko, P., Corsi, C., and Loewe, A. “Quantification and Classification of Potassium and Calcium Disorders with the Electrocardio-


2019


2018


2017


2016


2014


2 Data & Software


3 Proceedings


Kovacheva, E., Baron, L., Schuler, S., Gerach, T., Doessel, O., and Loewe, A. “Optimization Framework to Identify Constitutive Law Parameters of the Human Heart”. In: Current Directions...


Wieners, C., Dössel, O., Loewe, A., Frohnapfel, B., and Heuveline, V. Book of Abstracts - Workshop on Cardiac Modeling. - Towards an integrated numerical heart model, Coupling the relevant physics the right way. 2019. April 15-17, Bad Herrenalb, Germany.


4 Abstracts


Dössel, O. and Loewe, A. “Bridging the Gap Between Cardiac Modeling and Clinical Applications”. In: Modelling the Cardiac Function - Theory, Numerical Methods, Clinical Applications. 2020.


Brenneisen, J., Kovacheva, E., Gerach, T., Schuler, S., Dössel, O., and Loewe, A. “In-silico adaptation of a myofibroblast electrophysiology model including intracellular calcium handling”. In: Biomedizinische Technik / Biomedical Engineering. BMT 2020 - 54th Annual Conference of the German Society for Biomedical Engineering (VDE|DGBMT) 2020. DOI: 10.1515/bmt-2020-6011.


Nothstein, M., Müller-Edenborn, B., Arentz, T., Doessel, O., Jadidi, A., and Loewe, A. “Mechanistic insights into arrhythmogenensis in atrial fibrillation - Exploring the underlying electrical activity in AF and effects of targeted focal ablation of the critical substrate in-silico”. In: Biomedizinische


2018


[a31] Gerach, T., Doessel, O., and Loewe, A. “Identification of structurally non-identifiable and sloppy parameters of a detailed ventricular myocyte model”. In: *Biomedizinische Technik / Biomedical
4 Abstracts


[a16] Lutz, Y., A. F., Severi, S., Dössel, O., and Loewe, A. “Plasma electrolyte concentrations in patients with chronic kidney disease influence cardiac pacemaking in a computational model”. In:
5 Invited Talks


Electromechanics Research Group (Prof. Niederer / Bishop), King's College London 2021. London, UK.


[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.


6 Patents


7 Public Outreach / Popular Science


8 Book Chapters and Monographs


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

9 Reviewer Activity

9.1 Funding Agencies

- Belgian Physical Society (2021)
- British Heart Foundation (2020)
- Czech Academy of Sciences, member of evaluation panel “Engineering and Technology” (2021)
- Deutsche Forschungsgemeinschaft (2021)
- Fondazione Leonardo (2021)
- Medical Research Council, United Kingdom (2018)
- Swiss National Science Foundation (2021)
- Wellcome Trust (2021)

9.2 Scientific Journals

- Annals of Biomedical Engineering (2019-20)
- Biomechanics and Modeling in Mechanobiology (2020)
- Biophysical Journal (2019)
- BMC Nephrology (2021)
- Cardiology Research and Practice (2021)
• Cardiovascular Engineering and Technology (2021)
• Cardiovascular Research (2018)
• Circulation: Arrhythmia and Electrophysiology (2021)
• Clinical Medicine Insights Cardiology (2019)
• Computers in Biology and Medicine (2018-21)
• Computing in Cardiology Conference (2017-21)
• eLIFE (2021)
• Europace (2016-21)
• Frontiers in Cardiovascular Medicine (2020, 2022)
• Frontiers in Physiology (2017, 2019-21)
• Heart Rhythm (2017-19)
• IEEE Transactions on Biomedical Engineering (2016, 2019-21)
• International Journal of Clinical Cardiology (2017)
• JACC Clinical Electrophysiology (2021)
• Journal of Cardiovascular Electrophysiology (2021)
• Journal of Computational Physics (2021)
• Journal of Open Source Software (2021)
• Medical and Biological Engineering and Computing (2016-17, 2019)
• Medical Image Analysis (2020-21)
• 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)
• Simulation: Transactions of the Society for Modeling and Simulation (2018)

9.3 Universities

• Ghent University (2021)
• Politecnico di Milano (2021)
Axel Loewe’s Supervisions

10 Supervised PhD Students


• Nairn, D., expected 2022
• Gerach, T., expected 2022
• Brenneisen, J., expected 2022
• Nagel, C., expected 2023
• Barrios Espinosa, C.A., expected 2024
• Martinez Diaz, L.P., expected 2024
• Krauß, J., expected 2025

11 Supervised and Refereed Student Theses


