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Employment

Graz University of Technology
Institute of Mechanics (3050)
Graz University of Technology (90000)
Graz, Austria
1 Nov 2024 → present

Research outputs

Determination and sensitivity analysis of optimal control parameters of actively steered wheelsets

Lindbichler, L., Klanner, M., Melito, G. M. & Ellermann, K., Sept 2024, (E-pub ahead of print) *Proceedings of ISMA 2024 International Conference on Noise and Vibration Engineering and USD2024 International Conference on Uncertainty in Structural Dynamics*. KU Leuven

Optimizing Aortic Segmentation with an Innovative Quality Assessment: The Role of Global Sensitivity Analysis

Melito, G. M., Pepe, A., Jafarinaia, A., Krispel, T. & Egger, J., 14 Feb 2024, *Segmentation of the Aorta. Towards the Automatic Segmentation, Modeling, and Meshing of the Aortic Vessel Tree from Multicenter Acquisition - First Challenge, SEG.A. 2023, Held in Conjunction with MICCAI 2023, Proceedings: Towards the Automatic Segmentation, Modeling, and Meshing of the Aortic Vessel Tree from Multicenter Acquisition*. Pepe, A., Melito, G. M. & Egger, J. (eds.). Vol. 1. p. 110-126 17 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 14539 LNCS).

Modeling Anisotropic Electrical Conductivity of Blood: Translating Microscale Effects of Red Blood Cell Motion into a Macroscale Property of Blood

Jafarinaia, A., Badeli, V., Krispel, T., Melito, G. M., Brenn, G., Reinbacher-Köstinger, A., Kaltenbacher, M. & Hochrainer, T., 1 Feb 2024, In: *Bioengineering*. 11, 2, 19 p., 147.

Morphological parameters affecting false lumen thrombosis following type B aortic dissection: a systematic study based on simulations of idealized models

Jafarinaia, A., Melito, G. M., Müller, T. S., Rolf-Pissarczyk, M., Holzapfel, G., Brenn, G., Ellermann, K. & Hochrainer, T., Jun 2023, In: *Biomechanics and Modeling in Mechanobiology*. 22, 3, p. 885–904 20 p.

Development of a reduced-order model for understanding FL thrombosis in type B aortic dissection using a global sensitivity analysis and polynomial chaos expansion

Melito, G. M., Jafarinaia, A., Müller, T. S., Rolf-Pissarczyk, M., Holzapfel, G., Brenn, G., Hochrainer, T. & Ellermann, K., 2023, *Proceedings of the 7th ECCOMAS Young Investigators Conference (ECCOMAS YIC 2023) Creators*.

Monitoring of false lumen thrombosis in type B aortic dissection by impedance cardiography - A multiphysics simulation study

Badeli, V., Jafarinaia, A., Melito, G. M., Müller, T. S., Reinbacher-Köstinger, A., Hochrainer, T., Brenn, G., Ellermann, K., Biro, O. & Kaltenbacher, M., 12 Dec 2022, (E-pub ahead of print) In: *International Journal for Numerical Methods in Biomedical Engineering*. e3669.

Bayesian inference of multi-sensors impedance cardiography for detection of aortic dissection

Badeli, V., Ranftl, S., Melito, G. M., Reinbacher-Koestinger, A., Von der Linden, W., Ellermann, K. & Biro, O., 14 Apr 2022, In: *COMPEL - The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*. 41, 3, p. 824-839 16 p.

Sensitivity analysis for model optimization and calibration in type B aortic dissection

Melito, G. M., 13 Apr 2022, 125 p.

Sensitivity analysis study on the effect of the fluid mechanics assumptions for the computation of electrical conductivity of flowing human blood

Melito, G. M., Müller, T. S., Badeli, V., Ellermann, K., Brenn, G. & Reinbacher-Köstinger, A., Sept 2021, In: Reliability Engineering & System Safety. 213, 12 p., 107663.

Sensitivity Analysis of a Phenomenological Thrombosis Model and Growth Rate Characterisation

Melito, G. M., Jafarina, A., Hochrainer, T. & Ellermann, K., 9 Dec 2020, In: Journal of Biomedical Engineering and Biosciences . 7, p. 31 - 40 10 p.

Sensitivity Analysis of a Hemodynamic-based Model for Thrombus Formation and Growth

Melito, G. M., Jafarina, A., Hochrainer, T. & Ellermann, K., 31 Jul 2020, *Proceedings of the 6th World Congress on Electrical Engineering and Computer Systems and Sciences (EECSS'20): ICBES'20*. Virtually, 8 p. ICBES 127

Electrode positioning to investigate the changes of the thoracic bioimpedance caused by aortic dissection – a simulation study

Badeli, V., Melito, G. M., Reinbacher-Köstinger, A., Biro, O. & Ellermann, K., 25 Jun 2020, In: Journal of Electrical Bioimpedance. 11, 1, p. 38-48 11 p., 1891-5469.

Numerical simulation of various electrode configurations in impedance cardiography to identify aortic dissection

Reinbacher-Köstinger, A., Badeli, V., Melito, G. M., Magele, C. & Biro, O., 17 Mar 2020, *17th International Conference on Electrical Bioimpedance, ICEBI 2019: ICEBI 2019, Joinville, Santa Catarina, Brazil, 9-14 June 2019*. Bertemes-Filho, P. (ed.). Springer Singapore, p. 51-54 4 p. (IFMBE Proceedings; vol. 72).

A comprehensive Workflow and Framework for immersive Virtual Endoscopy of dissected Aortae from CTA Data

Egger, J., Gunacker, S., Pepe, A., Melito, G. M., Gsaxner, C., Li, J., Ellermann, K. & Chen, X., 16 Mar 2020, *Medical Imaging 2020: Image-Guided Procedures, Robotic Interventions, and Modeling*. Fei, B. & Linte, C. A. (eds.). Vol. 11315. 1131531. (Proceedings of SPIE - The International Society for Optical Engineering; vol. 11315).

On the Diagnosis of Aortic Dissection with Impedance Cardiography: A Bayesian Feasibility Study Framework with Multi-Fidelity Simulation Data

Ranftl, S., Melito, G. M., Badeli, V., Reinbacher-Köstinger, A., Ellermann, K. & Linden, W. V. D., Dec 2019, In: Proceedings MDPI AG.

Sensitivity analysis for electrical detection of aortic dissection

Melito, G. M., Badeli, V., Reinbacher-Köstinger, A. & Ellermann, K., Nov 2019, *Proceedings in Applied Mathematics and Mechanics: 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM)*. Wiley-VCH , Vol. 19,1. 2 p. e201900062

A Reliability Analysis with an Active-learning Metamodel for the Reconstruction of a Dissected Aorta Cross-section

Melito, G. M. & Ellermann, K., 28 Oct 2019.

Numerical simulation of various electrode configurations in impedance cardiography to identify aortic dissection

Reinbacher-Köstinger, A., Badeli, V., Melito, G. M., Magele, C. & Biro, O., 10 Jun 2019, (Unpublished).

Bayesian Uncertainty Quantification with Multi-Fidelity Data and Gaussian Processes for Impedance Cardiography of Aortic Dissection

Ranftl, S., Melito, G. M., Badeli, V., Reinbacher-Köstinger, A., Ellermann, K. & Linden, W. V. D., 2019, In: Entropy.

Activities

Determination and sensitivity analysis of optimal control parameters of actively steered wheelsets

Lindbichler, L. (Speaker), Klanner, M. (Contributor), Melito, G. M. (Contributor) & Ellermann, K. (Contributor)
9 Sept 2024 → 11 Sept 2024

9th European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2024

Melito, G. M. (Participant), Pepe, A. (Participant) & Egger, J. (Participant)
6 Jun 2024

9th European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2024

Schussnig, R. (Organiser), Melito, G. M. (Organiser), Ranno, A. (Organiser), Armour, C. H. (Organiser), Rolf-Pissarczyk, M. (Organiser) & Steinbrecher, I. (Organiser)
5 Jun 2024 → 6 Jun 2024

Sensitivity analysis as a tool for optimization of aortic segmentation algorithms from CT scan images

Melito, G. M. (Speaker)
7 May 2024

SEG.A. 2023 - Towards the Automatic Segmentation, Modeling and Meshing of the Aortic Vessel Tree from Multicenter Acquisitions (Event)

Pepe, A. (Editor), Melito, G. M. (Editor) & Egger, J. (Editor)
11 Mar 2024

SEG.A. 2023 - Towards the Automatic Segmentation, Modeling and Meshing of the Aortic Vessel Tree from Multicenter Acquisitions

Pepe, A. (Organiser), Melito, G. M. (Organiser) & Egger, J. (Organiser)
8 Oct 2023

Development of a ROM for understanding FL thrombosis in type B aortic dissection using a global sensitivity analysis and polynomial chaos expansion

Melito, G. M. (Speaker), Jafarinaia, A. (Contributor), Müller, T. S. (Contributor), Rolf-Pissarczyk, M. (Contributor), Holzapfel, G. (Contributor), Brenn, G. (Contributor), Hochrainer, T. (Contributor) & Ellermann, K. (Contributor)
19 Jun 2023

SEG.A. 2023 - Towards the Automatic Segmentation, Modeling and Meshing of the Aortic Vessel Tree from Multicenter Acquisitions

Pepe, A. (Organiser), Melito, G. M. (Organiser) & Egger, J. (Organiser)
15 Jun 2023 → 31 Aug 2023

Impact of false lumen thrombosis on blood flow dynamics and electrical conductivity in type B aortic dissection

Melito, G. M. (Speaker), Badeli, V. (Contributor), Jafarinaia, A. (Contributor), Müller, T. S. (Contributor), Reinbacher-Köstinger, A. (Contributor), Hochrainer, T. (Contributor), Brenn, G. (Contributor), Bíró, O. (Contributor), Kaltenbacher, M. (Contributor) & Ellermann, K. (Contributor)
1 Oct 2022

Time calibration of a novel phenomenological thrombus formation model through global sensitivity analysis and a Bayesian approach

Melito, G. M. (Speaker), Jafarinaia, A. (Contributor), Ranftl, S. (Contributor), von der Linden, W. (Contributor), Hochrainer, T. (Contributor) & Ellermann, K. (Contributor)
7 Jun 2022

Sensitivity analysis of a hemodynamic-based model for thrombus formation and growth

Melito, G. M. (Speaker), Jafarinaia, A. (Contributor), Hochrainer, T. (Contributor) & Ellermann, K. (Contributor)
15 Aug 2020

A Reliability Analysis with an Active-learning Metamodel for the Reconstruction of a Dissected Aorta Cross-section

Melito, G. M. (Speaker) & Ellermann, K. (Contributor)
29 Oct 2019

Projects

Aortic Dissection

Egger, J. (Co-Investigator (Col)), Pepe, A. (Co-Investigator (Col)), Schmalstieg, D. (Co-Investigator (Col)), Schussnig, R. (Co-Investigator (Col)), von der Linden, W. (Co-Investigator (Col)), Melito, G. M. (Co-Investigator (Col)), Holzapfel, G. (Co-Investigator (Col)), Ramalho Queiroz Pacheco, D. (Co-Investigator (Col)), Jafarina, A. (Co-Investigator (Col)), Brenn, G. (Co-Investigator (Col)), Ranftl, S. (Co-Investigator (Col)), Müller, T. S. (Co-Investigator (Col)), Gupta, I. (Co-Investigator (Col)), Steinbach, O. (Co-Investigator (Col)), Fries, T.-P. (Co-Investigator (Col)), Badeli, V. (Co-Investigator (Col)), Hochrainer, T. (Co-Investigator (Col)), Schanz, M. (Co-Investigator (Col)), Rolf-Pissarczyk, M. (Co-Investigator (Col)), Biro, O. (Co-Investigator (Col)) & Ellermann, K. (Co-Investigator (Col))

1/01/18 → 31/12/20