

Publications bioMMeda 2021

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- **Elyar Abbasi Bavil, Matthew G. Doyle, Charlotte Debbaut, Rachel M. Wald, Luc Mertens, Thomas L. Forbes and Cristina H. Amon:** Calibration of an electrical analog model of liver hemodynamics in fontan patients. JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME. 143(3).
- **Jean-François Argacha, Jean Decamp, Bert Vandeloo, Danilo Babin, Stijn Lochy, Karen Van den Bussche, Quentin de Hemptinne, Panagiotis Xaplanteris, Julien Magne, Patrick Segers, et al.:** Guiding myocardial revascularization by algorithmic interpretation of FFR pullback curves: a proof of concept study. FRONTIERS IN CARDIOVASCULAR MEDICINE. 8.
- **Vasiliki Bikia, Patrick Segers, Georgios Rovas, Stamatia Pagoulatou and Nikos Stergiopoulos:** On the assessment of arterial compliance from carotid pressure waveform. AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY. 321(2). p.H424-H434.
- **Tim Bomberna, Ghazal Adeli Koudehi, Charlotte Claerebout, Chris Verslype, Geert Maleux and Charlotte Debbaut:** Transarterial drug delivery for liver cancer: numerical simulations and experimental validation of particle distribution in patient-specific livers. EXPERT OPINION ON DRUG DELIVERY. 18(3). p.409-422.
- **Helena Braet, Mohammad Rahimi Gorji, Charlotte Debbaut, G Ghorbaniasl, Thibault Van Walleghem, Senne Cornelis, Sarah Cosyns, Chris Vervaet, Wouter Willaert, Wim Ceelen, et al.:** Exploring high pressure nebulization of pluronic F127 hydrogels for intraperitoneal drug delivery. EUROPEAN JOURNAL OF PHARMACEUTICS AND BIOPHARMACEUTICS. 169. p.134-143.
- **Daimé Campos Arias, Marc De Buyzere, Julio A. Chirinos, Ernst Rietzschel and Patrick Segers:** Longitudinal changes of input impedance, pulse wave velocity, and wave reflection in a middle-aged population: the Asklepios study. HYPERTENSION. 77(4). p.1154-1165.
- **Julio Chirinos, Jonathan Lee and Patrick Segers:** Mechanism of pulsus bisferiens in thoracoabdominal thoracic aneurysms: insights from wave intensity analysis. JOURNAL OF CLINICAL HYPERTENSION. 23(1). p.193-196.
- **Samaneh Davoudi and An Ghysels:** Sampling efficiency of the counting method for permeability calculations estimated with the inhomogeneous solubility-diffusion model. JOURNAL OF CHEMICAL PHYSICS. 154(5).
- **Stijn Herregodts, Mathijs Verhaeghe, Bert De Coninck, Malcolm Forward, Matthias Verstraete, Jan Victor and Patrick De Baets:** An improved method for assessing the technical accuracy of optical tracking systems for orthopaedic surgical navigation. INTERNATIONAL JOURNAL OF MEDICAL ROBOTICS AND COMPUTER ASSISTED SURGERY. 17(4).

- **Luciano Porto Kagami, Gabriele Orlando, Daniele Raimondi, Francois Ancien, Bhawna Dixit, Jose Gavaldá-García, Pathmanaban Ramasamy, Joel Roca-Martínez, Konstantina Tzavella and Wim Vranken:** b2bTools: online predictions for protein biophysical features and their conservation. NUCLEIC ACIDS RESEARCH. 49(W1). p.W52-W59.
- **Gerlinde Logghe, Bram Trachet, Patrick Segers, Julie De Backer, Joscha Mulorz, Philip Dueppers, Frank Vermassen, Hubert Schelzig, Isabelle Van Herzeele and Markus U. Wagenhäuser:** Outflow through aortic side branches drives false lumen patency in type B aortic dissection. FRONTIERS IN CARDIOVASCULAR MEDICINE. 8.
- **Wadi Mawad, Lasse Løvstakken, Solveig Fadnes, Thomas Grønli, Patrick Segers, Luc Mertens and Siri Ann Nyenes:** Right ventricular flow dynamics in dilated right ventricles: energy loss estimation based on blood speckle tracking echocardiography: a pilot study in children. ULTRASOUND IN MEDICINE AND BIOLOGY. 47(6). p.1514-1527.
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- **Enrico Riccardi, Andreas Krämer, Titus van Erp and An Ghysels:** Permeation rates of oxygen through a lipid bilayer using replica exchange transition interface sampling. JOURNAL OF PHYSICAL CHEMISTRY B. 125(1). p.193-201.
- **A. Sabbadini, Annette Caenen, L. B. H. Keijzer, P. L. M. J. van Neer, H. J. Vos, N. de Jong and M. D. Verweij:** Tapering of the interventricular septum can affect ultrasound shear wave elastography: an in vitro and in silico study. JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA. 150(1). p.428-440.
- **Hossein Shahbazi, Ali Mostafazade Abolmaali, Hossein Alizadeh, Hooman Salavati, Hamidreza Zokaei, Reza Zandavi, Sara Torbatian, Daniel Yazgi and Vahid Hosseini:** Development of high-resolution emission inventory to study the relative contribution of a local power plant to criteria air pollutants and Greenhouse gases. URBAN CLIMATE. 38.
- **Lisse Vera, Sofie Muylle, Glenn Van Steenkiste, Patrick Segers, Annelies Decloedt, Koen Chiers and Gunther van Loon:** Histological and biomechanical properties of systemic arteries in young and old Warmblood horses. PLOS ONE. 16(7).

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- **Pieter De Backer, Charlotte Allaey, Charlotte Debbaut and Roel Beelen: Point-of-care 3D printing:** a low-cost approach to teaching carotid artery stenting. 3D PRINTING IN MEDICINE. 7(1).

- **An Ghysels, Sander Roet, Samaneh Davoudi and Titus S. van Erp:** Exact non-Markovian permeability from rare event simulations. PHYSICAL REVIEW RESEARCH. 3(3).

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- **Guylian Stevens, Koen De Bosschere and Pascal Verdonck:** Is healthcare ready for a digital future? HiPEAC vision 2021: high performance embedded architecture and compilation. p.198-205.

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- **Ghazal Adeli Koudehi, Pieter Cornillie, Christophe Casteleyn, Winnok De Vos, Charlotte Debbaut, Patrick Segers and Michael Davis:** Modelling lymph uptake from the interstitium into the lymphatic system in the true morphology of a murine dermal network of terminal lymphatics. Lymphatic Forum 2021: exploring the lymphatic continuum, Abstracts.
- **Ghazal Adeli Koudehi, Carlos Alejandro Silvera Delgado, Matthias Van Impe, Pieter Cornillie, Christophe Casteleyn, Christian Vanhove, Charlotte Debbaut and Patrick Segers:** Modelling lymph propulsion in a 3D reconstructed murine collecting vessel with 3 lymphangions in series. 26th Congress of the European Society of Biomechanics (ESB 2021), Abstracts. p.654-654.
- **Ghazal Adeli Koudehi, Carlos Alejandro Silvera Delgado, Matthias Van Impe, Pieter Cornillie, Christophe Casteleyn, Christian Vanhove, Charlotte Debbaut and Patrick Segers:** Parametric sensitivity analysis of lymph flow in a 3D reconstructed murine collecting vessel with 3 lymphangions in series. ESAO 2021, the 47th Annual Conference of the European Society for Artificial Organs (ESAO), Uniting scientific minds towards lasting artificial organs, Abstracts.
- **S. Bezy, Annette Caenen, J. Duchenne, M. Orlowska, M. Amoni, L. B. H. Keijzer, R. Vos, J. D'hooge and J. U. Voigt:** Myocardial stiffness assessed by natural shear wave elastography is related to pressure-volume loop derived parameters. EUROPEAN HEART JOURNAL. 42. p.34-34.
- **S. Bezy, J. Duchenne, M. Orlowska, M. Amoni, Annette Caenen, L. B. H. Keijzer, K. Mccutcheon, S. Ingelaere, M. Cvijic, A. Puvrez, et al.:** Natural shear wave propagation speed is influenced by both changes in myocardial structural properties as well as loading conditions. EUROPEAN HEART JOURNAL-CARDIOVASCULAR IMAGING. 22(Suppl. 1). p.i167-i167.
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- **Tim Bomberna, Ghazal Adeli Koudehi, Chris Verslype, Lawrence Bonne, Geert Maleux and Charlotte Debbaut:** Evaluating the impact

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- **Tim Bomberna, Chris Verslype, Lawrence Bonne, Geert Maleux and Charlotte Debbaut:** The impact of injection timing and location on microparticle delivery for tumor targeting in a patient-specific liver. 2021 Summer Biomechanics, Bioengineering, and Biotransport Conference, Proceedings Book. p.124-125.
- **Annette Caenen, L. Keijzer, S. Bezy, J. Duchenne, M. Orlowska, A. F. W. Van Der Steen, N. De Jong, Patrick Segers, J. G. Bosch, J.-U. Voigt, et al.:** Closed-chest measurement of diastolic and systolic shear wave speed to assess myocardial stiffness. EUROPEAN HEART JOURNAL-CARDIOVASCULAR IMAGING. 22(Suppl. 1). p.i56-i57.
- **Samaneh Davoudi and An Ghysels:** Inhomogeneous solubility-diffusion model gives insight in efficacy of counting crossings method to calculate the membrane permeability. BIOPHYSICAL JOURNAL. 120(3). p.80A-80A.
- **Pieter De Backer, Saar Vermijs, Charles Van Praet, Sarah Vandenbulcke, Maryse Lejoly, Stefanie Vanderschelden, Pieter De Visschere, Alexandre Mottrie, Charlotte Debbaut and Karel Decaestecker:** 3D selective arterial clamping in robot assisted partial nephrectomy. JOURNAL OF UROLOGY. In Journal of Urology 206(Supplement 3). p.E293-E293.
- **Pieter De Backer, Joris Vangeneugden, Charles Van Praet, Maryse Lejoly, Saar Vermijs, Caroline Vanpeteghem and Karel Decaestecker:** Robot-assisted partial nephrectomy using intra-arterial renal hypothermia for highly complex endophytic or hilar tumors. JOURNAL OF UROLOGY. In Journal of Urology 206(Supplement 3). p.E295-E295.
- **Bhawna Dixit and Wim Vranken:** Backbone dynamics alignment of proteins: harnessing biophysical fingerprints in pairwise sequence alignment. BioSB 2021, Bioinformatics & Systems Biology Conference, Abstracts.
- **An Ghysels:** Oxygen permeation pathways through phospholipid membranes in the liquid ordered and liquid disordered phases. ISOTT 2021, meeting of the International Society on Oxygen Transport to Tissue, Abstracts.
- **An Ghysels:** Path sampling methodology for membrane permeability simulations. 2021 ISQBP President's Meeting, Abstracts.
- **Mohammad Rahimi Gorji, Sarah Cosyns, Charlotte Debbaut, Ghader Ghorbaniasl, Wouter Willaert and Wim Ceelen:** Analysis of the effect of liquid viscosity on the aerosol distribution during Pressurized Intraperitoneal Aerosol Chemotherapy (PIPAC) using computational modeling. The European Society of Surgical Oncology (ESSO40), Abstracts.
- **Mohammad Rahimi Gorji, Stéphane Dorbolo, Sarah Cosyns, Charlotte Debbaut, Ghader Ghorbaniasl, Wouter Willaert and Wim Ceelen:** In vitro study of aerosol droplet impact on the peritoneal surface after nebulization using the CapnoPen device. 2nd ISSPP

CONGRESS (International Society for the Study of Pleura and Peritoneum), Abstracts. p.79-79.

- **Mohammad Rahimi Gorji, Ghader Ghorbaniasl, Sarah Cosyns, Wouter Willaert, Wim Ceelen and Charlotte Debbaut:** Effect of fluid flow rate and droplet size on spatial aerosol distribution during pressurized intraperitoneal aerosol chemotherapy (PIPAC). 26th Congress of the European Society of Biomechanics (ESB 2021), Abstracts.
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- **Hooman Salavati, Charlotte Debbaut, Pim Pullens and Wim Ceelen:** Resistance to intraperitoneal drug delivery and heterogeneity of peritoneal metastasis: the role of hydraulic conductivity. ISSPP 2021 2nd Congress of the International Society for the Study of Pleura and Peritoneum. In Pleura and Peritoneum.
- **Hooman Salavati, Pim Pullens, Wim Ceelen and Charlotte Debbaut:** The effect of a necrotic core on the interstitial fluid pressure in solid tumors. 17th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering and 5th Conference on Imaging and Visualization, Abstracts.
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- **Nathan Sennesael, Pieter De Backer, Karel Decaestecker, Pieter De Visschere, Marijn Speeckaert, Saar Vermijs, Geert Villeirs, Charlotte Debbaut and Pim Pullens:** Ex-vivo renal vascular dominant region mapping using artery-selective contrast injections. ISMRM & SMRT Annual Meeting & Exhibition, Abstracts.
- **Sarah Vandenbulcke, Tim De Pauw, Frank Dewaele and Patrick Segers:** Implementing physiological processes in computational fluid

dynamics models of the cerebrospinal fluid. 26th Congress of the European Society of Biomechanics (ESB 2021), Abstracts. p.651-651.

- **Saar Vermijs, Pieter De Backer, Rania Matthys, Roberto Ciani, Charles Van Praet, Karel Decaestecker and Charlotte Debbaut:** Development of an interactive, patient-specific planning tool for partial nephrectomy procedures. OncoDot.3 symposium, Abstracts.
- **Wouter Vervust and An Ghysels:** Computational tools for protein-ligand binding kinetics in personalized medicine. OncoDot.3 symposium, Abstracts.
- **Wouter Vervust and An Ghysels:** Path sampling methods for protein-ligand binding kinetics. 2021 ISQBP President's Meeting, Abstracts.
- **Luxi Wei, Rahi Alipour Symakani, Annette Caenen, Lana B. H. Keijzer, Daphne Merkus, Beatrijs Bartelds, Yannick Taverne, Antonius F. van der Steen, Hendrik Vos and Mihai Strachinaru:** Externally induced shear waves in the right ventricular free wall during the cardiac cycle. JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA. 150(4). p.A289-A290.

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- **Daimé Campos Arias:** Impact of ageing on arterial physiology and hemodynamics : insights from 1D modelling and in vivo data.
- **Federico Canè:** Patient-specific computational fluid dynamics models of the human left heart using the chimera technique

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- **Tim Bomberna, Ghazal Adeli Koudehi, Pedro Baptista and Charlotte Debbaut:** Proof-of-concept CFD model to improve hepatic arterial tree recellularization protocols.
- **Violette Deleeuw, Matthias Van Impe, Gerlinde Logghe, Marine Vanhomwegen, Margie Olbinado, Marco Stampanoni, Patrick Segers, Lynn Sakai, Patrick Sips and Julie De Backer:** Local TGF-beta sequestration by fibrillin-1 regulates vascular wall homeostasis in the thoracic aorta.
- **Matthias Van Impe, Regina Le Roux, Violette Deleeuw, Julie De Backer, Patrick Sips and Patrick Segers:** Zebrafish can complement mice as a valuable model for cardiovascular disease: blood flow dynamics modelling based on high-frequency ultrasound and synchrotron imaging is feasible.

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- **An Ghysels:** Bringing hidden variables into the open unveils a barrier for lipid insertion into membranes. BIOPHYSICAL JOURNAL. 120(17). p.3542-3543.