

Scientific Records

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1 Journal Articles

2022

55. Pravdivtseva, M.S., Gaidzik, F., **Berg, P.**, Larsen, N., Hövener, J.B., Jansen, O., Ravesh, M.S.: Interplay of acceleration and resolution on flow quantification in intracranial vessels and aneurysms with 4D flow MRI at 3T, *Tomography*, 01/2022, accepted for publication
54. Saalfeld, S., Stahl, J., Korte, J., Marsh, L., Preim, B., Beuing, O., Cherednychenko, Y., Behme, D., **Berg, P.**: Can Endovascular Treatment of Fusiform Intracranial Aneurysms Restore the Healthy Hemodynamic Environment? - A Virtual Pilot Study, *Frontiers in Neurology, section Endovascular and Interventional Neurology*, 2021, doi: 10.3389/fneur.2021.771694

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53. Sprengel, U., Saalfeld, P., Stahl, J., Mittenentzwei, S., Drittel, M., Behrendt, B., Kaneko, N., Behme, D., **Berg, P.**, Preim, B., Saalfeld, S.: Virtual embolization for treatment support of intracranial AVMs using an interactive desktop and VR application, *International Journal of Computer Assisted Radiology and Surgery*, 16(12), pp. 2119-2127, 12/2021
52. Gaidzik, F., Pravdivtseva, M., Larsen, N., Jansen, O., Hövener, J.B., **Berg, P.**: Luminal Enhancement in Intracranial Aneurysms: Fact or Feature? ? A Quantitative Multimodal Flow Analysis, *International Journal of Computer Assisted Radiology and Surgery*, 16(11), pp. 1999-2008, 11/2021
51. Saalfeld, S., Behme, D., Almizel, M., **Berg, P.**: Hemodynamics of anterior communicating artery aneurysms using combined imaging of the anterior circulation, *Current Directions in Biomedical Engineering*, 7(2), pp. 887-890, 10/2021
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48. Velvaluri, P., Pravdivtseva, M., **Berg, P.**, Wodarg, F., Lima de Miranda, R., Hövener, J.B., Jansen, O., Quandt, E.: Thin-film patient-specific flow diverter stents for the treatment of intracranial aneurysms, *Advanced Materials Technologies*, 06/2021, DOI: 10.1002/admt.202100384
47. Swiatek, V., Neyazi, B., Roa, J., Zanyaty, M., Samaniego, E., Ishii, D., Lu, Y., Sandalcioglu, I.E., Saalfeld, S., **Berg, P.**, Hasan, D.: Aneurysm Wall Enhancement Is Associated with Decreased Intracranial IL-10 And Morphological Features of Instability, *Neurosurgery*, 89(4):E213-E214, 07/2021
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45. Niemann, A., Voß, S., Tulamo, R., Weigand, S., Preim, B., **Berg, P.**, Saalfeld, S.: Complex wall modelling for hemodynamic simulations of intracranial aneurysms based on histological images, *International Journal of Computer Assisted Radiology and Surgery*, 16(4):597-60, 03/2021
44. Pravdivtseva, M.S., Gaidzik, F., **Berg, P.**, Hoffman, C., Rivera-Rivera, L.A., Medero, R., Bodart, L., Roldan-Alzate, A., Speidel, M.A., Johnson, K.M., Wieben, O., Jansen, O., Hövener, J.B., Larsen, N.: Pseudo-Enhancement in Intracranial Aneurysms on Black Blood MRI: effects of flow rate, spatial resolution, and additional flow suppression, *Journal of Magnetic Resonance Imaging*, 54(3):888-901, 02/2021
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41. Neyazi, B., Swiatek, V., Skalej, M., Beuing, O., Stein, K.-P., Hattingen, J., Preim, B., **Berg, P.**, Saalfeld, S., Sandalcioglu, I. E.: Rupture risk assessment for multiple intracranial aneurysms - Why there is no need for dozens of clinical, morphological and hemodynamic parameters, In: *Therapeutic Advances in Neurological Disorders*, 11/2020, accepted for publication
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38. Larsen, N., Flüh, C., Saalfeld, S., Voß, S., Hille, G., Trick, D., Wodarg, F., Synowitz, M., Jansen, O., **Berg, P.**: Multimodal validation of focal enhancement in intracranial aneurysms as a surrogate marker for aneurysm instability, *Neuroradiology*, 62:1627-1635, 07/2020
37. Kaneko, N., Ullman, H., Ali, F., **Berg, P.**, Ooi, Y.C., Tateshima, S., Colby, G.P., Komuro, Y., Hu, P., Khatibi, K., Ponce Mejia, L.L., Szeder, V., Nour, M., Guo, L., Chien, A., Vinuela, F., Nemoto, S., Mashiko, T., Sehara, Y., Hinman, J.D., Duckwiler, G., Jahan, R., In vitro modeling of human brain arteriovenous malformation for endovascular simulation and flow analysis, *World Neurosurgery*, 141: e873-e879, 06/2020
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35. Saalfeld, S., Voß, S., Beuing, O., Preim, B., **Berg, P.**: Flow-Splitting-Based Computation of Outlet Boundary Conditions for Improved Cerebrovascular Simulation in Multiple Intracranial Aneurysms, *International Journal of Computer Assisted Radiology and Surgery*, 14(10):1805-1813, 07/2019
34. Sindeev, S., Kirschke, J.S., Prothmann, S., Frolov, S., Liepsch, D., **Berg, P.**, Zimmer, C. and Friedrich, B.: Evaluation of flow changes after telescopic stenting of a giant fusiform aneurysm of the vertebrobasilar junction, *BioMedical Engineering OnLine*, 18(1):82, 07/2019
33. **Berg, P.**, Saalfeld, S., Voß, S., Beuing, O., Janiga, G.: A review on the reliability of hemodynamic modeling in intracranial aneurysms - Why CFD alone cannot solve the equation, *Neurosurgical Focus*, 47(1):E15, 07/2019
32. Voß, S., Beuing, O., Janiga, G., **Berg, P.**: Stent-induced vessel deformation after intracranial aneurysm treatment - A hemodynamic pilot study, *Computers in Biology and Medicine*, 111:103338, 06/2019
31. **Berg, P.**, Voß, S., Janiga, G., Saalfeld, S., Bergersen, A.W., Valen-Sendstad, K., Bruening, J., Goubergrits, L., Spuler, A., Chiu, T.L., On Tsang, A.C., Copelli, G., Csippa, B., Paál, G., Závodszy, G., Detmer, F.J., Chung, B.J., Cebal, J.R., Fujimura, S., Takao, H., Karmonik, C., Elias, S., Cancelliere, N.M., Najafi, M., Steinman, D.A., Pereira, V.M., Piskin, S., Finol, E.A., Pravdivtseva, M., Velvaluri, P., Rajabzadeh-Oghaz, H., Paliwal, N., Meng, H., Seshadhri, S., Venguru, S., Shojima, M., Sindeev, S., Frolov, S., Qian, Y., Yu-An Wu, Y., Carlson, K.D., Kallmes, D.F., Dragomir-Daescu, D., Beuing, O.: Multiple Aneurysms AnaTomy CHallenge 2018 (MATCH) - Phase II: Rupture Risk Assessment, *International Journal of Computer Assisted Radiology and Surgery*, 14(10):1795-1804, 05/2019

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26. Valen-Sendstad, K., Bergersen, A. W., Shimogonya, Y., Goubergrits, L., Bruening, J., Pallares, J., Vernet, A., Piskin, S., Pekkan, K., Geers, A. J., Larrabide, I., Rapaka, S., Mihalef, V., Fu, W., Qiao, A., Jain, K., Roller, S., Mardal, K. A., Kamakoti, R., Spirka, T., Ashton, N., Revell, A., Aristokleous, N., Houston, J. G., Ishida, F., Tsuji, M., Menon, P. G., Browne, L. D., Broderick, S., Shojima, M., Koizumi, S., Barbour, M., Aliseda, A., Morales, H. G., Lefevre, T., Hodis, S., Al-Smadi, Y., Tran, J. S., Marsden, A. L., Vaippummadhom, S., Srinivasan, A., Brown, A. G., Debus, K., Niizuma, K., Rashad, S., M. Owais Khan, M. O., Updegrove, A. R., Shadden, S. C., Cornelissen, B. M., Majoie, C., B., **Berg, P.**, Saalfeld, S., Kono, K., Steinman, D. A.: Real-World Variability in the Prediction of Intracranial Aneurysm Wall Shear Stress: The 2015 International Aneurysm CFD Challenge, *Cardiovascular Engineering and Technology*, 09(4), 544-564, 09/2018
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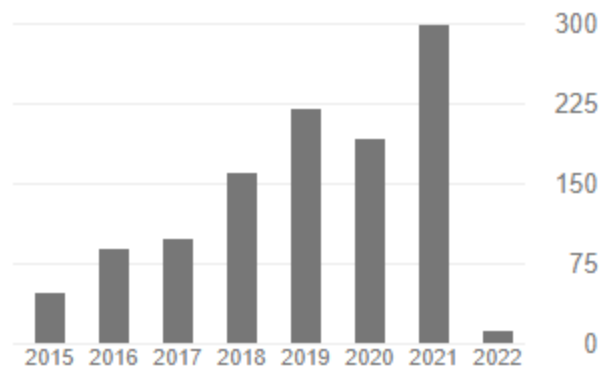
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Total number of citations: 1173

2 Book Chapters

2017

1. **Berg, P.**, Daróczy, L., Janiga, G.: Virtual Stenting for Intracranial Aneurysms: A Risk-Free, Patient-Specific Treatment Planning Support for Neuroradiologists and Neurosurgeons, In: *Computing and Visualization for Intravascular Imaging and Computer-Assisted Stenting*, (Balocco, S., Zuluaga, M. A., Zahnd, G., Lee, S. L., and Demirci, S., Eds.), Elsevier, 371-412, 01/2017

3 Conference Proceedings

3.1 Peer-Reviewed Papers

2021

37. Behrendt, B., Engelke, W., **Berg, P.**, Beuing, O., Hotz, I., Preim, B. and S. Saalfeld, S.: Visual exploration of intracranial aneurysm blood flow adapted to the clinical researcher, In: *23rd EuroVis conference*, Virtual, Zurich, Switzerland, pp. 1-5, 06/2021
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35. Pravidivtseva, M., Velvaluri, P., Wodarg, F., Quandt, E., Lima de Miranda, R., Hövener, J.B., **Berg, P.**, Jansen, O.: The circle of stent design for intracranial aneurysm treatment: role of MRI, In: *Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, Vancouver, Canada, pp. 1-5, 05/2021
34. Sprengel, U., Saalfeld, P., Mittenentzwei, S., Drittel, M., Neyazi, B., **Berg, P.**, Preim, B., Saalfeld, S.: Interactive Visualization of Cerebral Blood Flow for Arteriovenous Malformation Embolisation, In: *Bildverarbeitung für die Medizin (BVM)*, Regensburg, Germany, 03/2021
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31. Kaneko, N., Ullman, H., Ali, F., Berg, P., Ooi, Y.C., Tateshima, S., Colby, G.P., Komuro, Y., Hu, P., Szeder, V., Nour, M., Guo, L., Chien, A., Vinuela, F., Nemoto, S., Hinman, J.D., Duckwiler, G., Jahan, R., New in vitro AVM model with realistic nidus for simulation and flow analysis, In: *Society of NeuroInterventional Surgery (SNIS) 17th Annual Meeting*, DOI: 10.1136/neurintsurg-2020-SNIS.72, 08/2020
30. Pravidivtseva, M., Hoffman, C., Rivera-Rivera, L., Medero, R., Bodart, L., Roldan-Alzate, A., Speidel, M., Mistretta, C., Strother, C., Johnson, K., Wieben, O., Jansen, O., Larsen, N., **Berg, P.**, Peschke, E., Hövener, J.: Investigation of black blood MRI signal enhancement in a patient-specific aneurysm model, In: *Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, Sydney, Australia, pp. 1-6, 04/2020
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13. Janiga, G., **Berg, P.** and Thévenin, D.: Overview on the Computational Fluid Dynamics Challenge 2013 for rupture-prediction in two intracranial aneurysms. In: *The 10th international symposium on Biomechanics in Vascular Biology and Cardiovascular Disease*, Rotterdam, The Netherlands, 04/2015

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12. Roloff, C., **Berg, P.**, Janiga, G., Thévenin, D., Particle Image Velocimetry for validation of aneurysm blood flow simulations - comparison of planar and stereo-technique In: *6th European Conference on Computational Fluid Dynamics (ECFD VI)*, Barcelona, Spain, Paper MS052A-5, 07/2014
11. **Berg, P.**, Abdelsamie, A., Janiga, G., Thévenin, D., Large Eddy Simulation in intracranial aneurysms: Should transition be considered in numerical modeling? In: *6th European Conference on Computational Fluid Dynamics (ECFD VI)*, Barcelona, Spain, Paper MS233A-2, 07/2014
10. **Berg, P.**, Daróczy, L., Beuing, O., Skalej, M., Thévenin, D., Janiga, G.: CFD-based investigation of various flow diverter stent compressions in a patient-specific giant aneurysm In: *Interdisciplinary Cerebrovascular Symposium*, Zurich, Switzerland, 06/2014

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9. **Berg, P.**, Janiga, G., Beuing, O., Rössl, C. and Thévenin, D.: Virtual Intracranial Stenting: How does stent porosity influence hemodynamics? In: *12th Congress of the World Federation of Interventional and Therapeutics Neuroradiology*, Buenos Aires, Argentina, Interventional Neuroradiology 19 (Suppl. 1): 191, 2013
8. **Berg, P.**, Janiga, G., Gasteiger, R., Beuing, O. and Thévenin, D.: Rupture prediction in intracranial aneurysms - Advanced flow structure detection at known rupture sites. In: *12th Congress of the World Federation of Interventional and Therapeutics Neuroradiology*, Buenos Aires, Argentina, Interventional Neuroradiology 19 (Suppl. 1): 190, 2013

7. Janiga, G., **Berg, P.**, Beuing, O., Skalej, M. and Thévenin, D.: Computational hemodynamics in a patient-specific aneurysm treated with Web-Device. In: *12th Congress of the World Federation of Interventional and Therapeutics Neuroradiology*, Buenos Aires, Argentina, Interventional Neuroradiology 19 (Suppl. 1): 150, 2013
6. Janiga, G., **Berg, P.** and Thévenin, D.: Report on the "Computational Fluid Dynamics Challenge 2013 for rupture-prediction in intracranial aneurysms". In: *12th Congress of the World Federation of Interventional and Therapeutics Neuroradiology*, Buenos Aires, Argentina, Interventional Neuroradiology 19 (Suppl. 1): 191, 2013
5. **Berg, P.**, Janiga, G., Stucht, D., Speck, O., Thévenin, D., Validation of Cerebral Blood Flow in Intracranial Aneurysms: CFD versus 7-Tesla PC-MRI, In: *ASME 2013 Summer Bioengineering Conference*, Sunriver, Oregon, USA, SBC2013-14289, pp. V01AT04A007; 2 pages, doi:10.1115/SBC2013-14289, 06/2013
4. **Berg, P.**, Abdelsamie, A., Yu, H., Janiga, G., Thévenin, D., Multi-Phase Blood Flow Modeling in Intracranial Aneurysms Considering Possible Transition to Turbulence, In: *ASME 2013 Summer Bioengineering Conference*, Sunriver, Oregon, USA, SBC2013-14240, pp. V01AT04A005; 2 pages, doi:10.1115/SBC2013-14240, 06/2013

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3. Janiga, G., Beuing, O., Neugebauer, M., **Berg, P.**, Thévenin, D. and Skalej, M.: Oscillatory flow behavior and rupture prediction for intracranial aneurysms. In: *IntraCranial Stent Meeting (ICS)*, Madison, Wisconsin, 1 page, 10/2012
2. Janiga, G., Stucht, D., Gasteiger, R., **Berg, P.**, Speck, O. and Thévenin, D.: Characterization of intracranial hemodynamics using 7 Tesla 4D PC-MRI measurements and CFD. In: *IntraCranial Stent Meeting (ICS)*, Madison, Wisconsin, 1 page, 10/2012
1. **Berg, P.**, Janiga, G., Thévenin, D., CFD Challenge: Solutions Using The Commercial Solver Fluent® And The Open Source Solver OpenFOAM®, In: *ASME Summer Bioengineering Conference (SBC)*, Farjado, Puerto Rico, USA, SBC2012-80168, pp. 115-116; 2 pages, doi:10.1115/SBC2012-80168, 06/2012

4 Conference/Workshop Organization and Chairman Activities

10. Session Organizer and Chair "SMART - Symposium for Multidisciplinary Artificial organs Research Translation", *The 47th European Society for Artificial Organs Congress (ESAO)*, London, United Kingdom, 09/2021
9. Session Chair "Experimental and Computational Methods", *The 46th European Society for Artificial Organs Congress (ESAO)*, Hannover, Germany, 09/2019
8. Session Organizer and Chair "SMART - Symposium for Multidisciplinary Artificial organs Research Translation", *The 46th European Society for Artificial Organs Congress (ESAO)*, Hannover, Germany, 09/2019
7. **Member of the Scientific Committee, *The 46th European Society for Artificial Organs Congress (ESAO)*, Hannover, Germany, 09/2019**
6. Session Chair "Biomedical Flow", *The 17th International Conference on Fluid Flow Technologies (CMFF18)*, Budapest, Hungary, 09/2018
5. **Workshop Organizer "Validation of biomedical flow simulation", *The 17th International Conference on Fluid Flow Technologies (CMFF18)*, Budapest, Hungary, 09/2018**
4. Session Chair "Aneurysms", *IEEE Engineering in Medicine and Biology Society (EMBC18)*, Honolulu, USA, 07/2018
3. **Chair of the Scientific Committee, *15th Interdisciplinary Cerebrovascular Symposium*, Magdeburg, Germany, 06/2018**
2. Session Chair "Introductory courses I & II", *Interdisciplinary Cerebrovascular Symposium (ICS)*, Magdeburg, Germany, 06/2018
1. Session Chair "The Evolution of Computational Hemodynamics as a Clinical Tool in Decision Making", *Interdisciplinary Cerebrovascular Symposium (ICS)*, Gold Coast, Australia, 11/2015

5 Invited Talks

8. Multimodal modelling of intravascular hemodynamics, In: International workshop on Mathematical Modeling in Hemodynamics, Mines Saint-Etienne, France, 12/2021
7. Multimodal modelling of intravascular hemodynamics in cerebral aneurysms, In: *RTG 2154 Online Colloquium*, Material for Brain, Christian-Albrechts-University Kiel, 09/2020
6. Hemodynamic modeling in intracranial aneurysms - Why simulations alone cannot solve the equation, In: *Symposium "Computer-aided simulations in the regulatory approval process of medical devices"*, The 46th European Society for Artificial Organs Congress (ESAO), Hannover, Germany, 09/2019
5. Patient-specific hemodynamic simulations for intracranial aneurysms - Computational Fluid Dynamics or Color For Doctors?, In: *Seminar talk*, University Hospital Schleswig-Holstein, Kiel, Germany, 08/2018
4. Patient-specific hemodynamic simulations for the individualized treatment support of intracranial aneurysms - Where are we now?, In: *Seminar talk*, Politecnico di Milano, Italy, 09/2017
3. Rupture risk assessment and treatment support for cerebral aneurysms – Chances and limitations of computational studies, In: *Short Course 'Biofluidmechanics'*, Heidelberg, Germany, 11/2016
2. Computational Fluid Dynamics & Virtual Stenting., In: *MICCAI-Workshop on Computing and Visualization for Intravascular Imaging and Computer Assisted Stenting*, Athens, Greece, 10/2016
1. Computational Fluid Dynamics in Intracranial Aneurysms - From Imaging to Rupture Prediction, In: *International Conference in Computational Surgery and Dual Training (COSINE)*, Bordeaux, France, 05/2016

6 Supervised Theses

2021

26. Mews, R., Identifikation geeigneter Blutflusssimulationsparameter für die Erzeugung von neurovaskulären KI-Trainingsdatensätzen, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 11/2021
25. Will, M., Numerische Betrachtung der Mikrowellenablation mithilfe der Simulationsumgebung STAR-CCM+, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 10/2021
24. Mandal, A., Predicting Wall Shear Stress for Intracranial Aneurysms using 3D Deep Learning, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 10/2021
23. Bernovskis, A., Einfluss patientenspezifischer Einströmrandbedingungen auf die intra-aneurysmale Hämodynamik, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 09/2021
22. Almizel, M., Morphologische und hämodynamische Betrachtung von intrakraniellen Aneurysmen der Arteria communicans anterior, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 06/2021
21. Scholtyssek, J., Korrelation von MR-Gefäßwandanreicherung und lokaler Hämodynamik in intrakraniellen Aneurysmen, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 03/2021

2020

20. Weiß, T., Vergleich von Auslassrandbedingungen für die Durchführung anatomisch komplexer Blutflusssimulationen der zerebralen Gefäße, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 09/2020
19. Dembeck, P., Bewertung von virtuellen Stenting-Verfahren für die Behandlung zerebraler Aneurysmen, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 04/2020

2019

18. Mahurshi Parikh, Evaluation of a new approach for dialysis fluid individualization, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 08/2019
17. Vecce, S. and Piazza, A., Comparison of finite element stent deployment and a fast virtual stenting approach in coronary arteries and cerebral aneurysms, Master's Thesis, Politecnico di Milano, Univ. of Magdeburg "Otto von Guericke", 04/2019

2018

16. Klenkov, R., Systematic comparison of rheological blood models, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 10/2018
15. Knopf, S., Strömungsmechanische Untersuchung gesunder und erkrankter Aortenbögen mit Hilfe von optischen Flussmessungen und numerischen Simulationen, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 07/2018
14. Schöbel, L., Hämodynamische Flusssimulation im Aortenbogen unter Berücksichtigung einer Transkatheter-Aortenklappen-Implantation (TAVI), Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 03/2018

2017

13. Voß, M., Literaturrecherche zur Variabilität der Randbedingungen für hämodynamische Strömungssimulationen in intrakraniellen Aneurysmen, Bachelor's Thesis, Univ. of Magdeburg "Otto von Guericke", 12/2017
12. Nadig, A., Development of a CFD database for patient-specific intracranial aneurysms to automatically evaluate rupture risk indicators, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 09/2017

11. Sell, K., Impact of different reconstruction kernels on the generation of patient-specific aneurysm surface models and blood flow simulations, Master's Thesis, Univ. of Magdeburg "Otto von Guericke", 06/2017

2016

10. Manthey, S., Rekonstruktion von Druckverteilungen auf Basis von simulierten und gemessenen Geschwindigkeitsfeldern, Master's Thesis LSS-M13/15, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 08/2016
9. Knopf, S., Implementierung einer Mikrozahlringpumpe für in-vitro PIV-Messungen an zerebralen Aneurysmen, Bachelor's Thesis, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 03/2016

2015

8. Fischer, L., Numerische Blutflussimulation in menschlichen Aortenbögen mittels StarCCM+, Master's Thesis LSS-M07/15, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 12/2015
7. Pachel, R., Fluid-Strukturkopplung eines axial umströmten, dünnwandigen Zylinders im niedrigen Überschallbereich, Bachelor's Thesis LSS-B06/15, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 11/2015
6. Müller, S., Simulation der Fluid-Struktur-Interaktion an einem flexiblen oszillierenden aerodynamischen Profil mit der Opensource Toolbox OpenFOAM extend, Bachelor's Thesis LSS-B09/15, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 09/2015
5. Voß, S., Untersuchung des Einflusses von Fluid-Struktur-Interaktionen auf die Hämodynamik intrakranieller Aneurysmen, Master's Thesis LSS-M04/14, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 04/2015
4. Gerloff, C., Identifikation eines geeigneten Verfahrens zur Modellierung einer Thrombosebildung in intrakraniellen Aneurysmen, Bachelor's Thesis LSS-B06/14, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 03/2015

2014

3. Zschörner, C., Berechnung instationärer Druckfelder im menschlichen Gefäßsystem auf Basis gemessener PC-MRI Geschwindigkeiten, Diplomarbeit LSS-D01/14, Lehrstuhl für Strömungsmechanik und Strömungstechnik Univ. of Magdeburg "Otto von Guericke", 09/2014

2012

2. Kasper, R., Numerische Simulation der Aerodynamik eines Hotelgebäudes, Bachelor's Thesis LSS-B04/12, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 06/2012
1. Abraham, N., Simulation des Resin Transfer Moulding mit OpenFOAM®, Studienarbeit LSS-S02/12, Lehrstuhl für Strömungsmechanik und Strömungstechnik, Univ. of Magdeburg "Otto von Guericke", 06/2012

7 Accepted Grants

7. German Research Foundation (DFG): "Multi-scale coupling of vascular hemodynamics for AI-based standardized evaluation of neurological pathologies" (10/2021-09/2024)
6. European Regional Development Fund (EFRE): "Künstliche Arterien und Erythrozyten zur Optimierung der Gefäßprothesenentwicklung (ArtEry)" (10/2019-09/2020)
5. European Regional Development Fund (EFRE): "Quantitative Analyse von CT-Koronarangiographie-Daten" (06/2019-05/2020)
4. German Research Foundation (DFG): "GEPARD - Gefäßwandsimulation und -visualisierung zur Patientenindividualisierten Blutflussvorhersage für die intrakranielle Aneurysmamedellierung" (07/2018-06/2021)
3. European Regional Development Fund (EFRE): "Hämodynamische Beschreibung der Transkatheter-Aortenklappen-Implantation (TAVI) zur Identifikation von Thrombooserisiken" (05/2018-04/2020)
2. Industry Project: "Bewertung von Rekonstruktion, Segmentierung und virtuellem Stenting eines Forschungsprototypen" (09/2017-08/2019)
1. European Regional Development Fund (EFRE): "Sensitivitätsanalyse klinisch verwendeter Rekonstruktionskernel für Rotationsangiographien" (07/2017-06/2019)

8 Awards and Prizes

20. **Dirk Bartz Prize for Visual Computing in Medicine 2021 - 1st prize "Visual exploration of intracranial aneurysm blood flow adapted to the clinical researcher", 23rd Conference on Visualization (EuroVis), Zurich, 06/2021**
19. Best Presentation Award "Fokales Enhancement intrakranieller Aneurysmen im MR vessel wall imaging: Multimodale Validierung eines Biomarkers für ein erhöhtes Rupturrisiko", 55th Annual Congress of the German Society for Neuroradiology (neuroRAD 2020), online conference, 10/2020
18. Poster prize "Combining high-resolution vessel wall imaging with image-based flow evaluation in unruptured middle cerebral aneurysms", *54th Annual Congress of the German Society for Neuroradiology (neuroRAD 2019)*, Frankfurt, Germany, 10/2019
17. DAAD Travel Scholarship, *6th International Conference on Computational and Mathematical Biomedical Engineering (CMBE19)*, Sendai, Japan, 06/2019
16. Abstract selection among the best 15 contributions, *11. Deutsche Kardiagnostik-Tage*, Leipzig, Germany, 02/2019
15. **Winner of the "Best Young Research" competition, 53rd Annual Congress of the German Society for Neuroradiology (neuroRAD 2018)**, Frankfurt, Germany, 10/2018
14. 1st prize-winner of the "Flow Visualisation Gallery", *The 17th International Conference on Fluid Flow Technologies*, Budapest, Hungary, 09/2018
13. Finalist "Hugo-Junkers-Prize for Research and Innovation in Saxony-Anhalt", 12/2017
12. **Best Presentation Award, 52nd Annual Congress of the German Society for Neuroradiology (neuroRAD 2017)**, Cologne, Germany, 10/2017
11. DAAD Travel Scholarship, *IEEE Engineering in Medicine and Biology Society (EMBC)*, Jeju Island, Korea, 07/2017
10. Honorable Mention Award, *Eurographics Workshop on Visual Computing for Biology and Medicine*, Bergen, Norway, 09/2016
9. DAAD Travel Scholarship, *Summer Biomechanics, Bioengineering and Biotransport Conference*, National Harbor, Maryland, USA, 06/2016
8. **Klaus-Erich-Pollmann-Forschungsförderungspreis, 11/ 2015**
7. **Faculty prize "Best Doctoral Student 2015", Faculty of Process and Systems Engineering, University of Magdeburg "Otto-von-Guericke", 11/2015**
6. DAAD Travel Scholarship, *Summer Biomechanics, Bioengineering and Biotransport Conference*, Snowbird, Utah, USA, 06/2015
5. DAAD Travel Scholarship, *11th International Symposium on Biomedical Imaging (ISBI)*, Beijing, China, 04/2014
4. **Excellent Paper Award, 5th International Conference on Bioinformatics and Biomedical Technology (ICBBT), Macau, China, 03/2013**
3. DAAD Travel Scholarship, *5th International Conference on Bioinformatics and Biomedical Technology (ICBBT)*, Macau, China, 03/2013
2. **DELSYS Best Paper Award, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Berlin, Germany, 04/2012**
1. **Best Paper Award - 3rd prize, Computer- und Roboterassistierte Chirurgie (CURAC), Magdeburg, Germany, 09/2011**