Michael Markl

List of Publications by Year
in descending order

311 papers	14,169 citations	18436 62 h-index	27345 106 g-index
314 all docs	314 docs citations	314 times ranked	8137 citing authors

#	Article	IF	Citations
1	4D flow cardiovascular magnetic resonance consensus statement. Journal of Cardiovascular Magnetic Resonance, 2015, 17, 72.	1.6	642
2	4D flow MRI. Journal of Magnetic Resonance Imaging, 2012, 36, 1015-1036.	1.9	583
3	Comprehensive 4D velocity mapping of the heart and great vessels by cardiovascular magnetic resonance. Journal of Cardiovascular Magnetic Resonance, 2011, 13, 7.	1.6	379
4	Bicuspid Aortic Valve Is Associated With Altered Wall Shear Stress in the Ascending Aorta. Circulation: Cardiovascular Imaging, 2012, 5, 457-466.	1.3	376
5	Time-resolved three-dimensional phase-contrast MRI. Journal of Magnetic Resonance Imaging, 2003, 17, 499-506.	1.9	365
6	Time-resolved 3D MR velocity mapping at 3T: Improved navigator-gated assessment of vascular anatomy and blood flow. Journal of Magnetic Resonance Imaging, 2007, 25, 824-831.	1.9	363
7	Valve-Related Hemodynamics Mediate Human Bicuspid Aortopathy. Journal of the American College of Cardiology, 2015, 66, 892-900.	1.2	360
8	Bicuspid Aortic Cusp Fusion Morphology Alters Aortic Three-Dimensional Outflow Patterns, Wall Shear Stress, and Expression of Aortopathy. Circulation, 2014, 129, 673-682.	1.6	350
9	Aortic Dilation in Bicuspid Aortic Valve Disease. Circulation: Cardiovascular Imaging, 2013, 6, 499-507.	1.3	329
10	4D flow imaging with MRI. Cardiovascular Diagnosis and Therapy, 2014, 4, 173-92.	0.7	227
11	The American Association for Thoracic Surgery consensus guidelines on bicuspid aortic valveâ€"related aortopathy: Full online-only version. Journal of Thoracic and Cardiovascular Surgery, 2018, 156, e41-e74.	0.4	202
12	Comparison of flow patterns in ascending aortic aneurysms and volunteers using fourâ€dimensional magnetic resonance velocity mapping. Journal of Magnetic Resonance Imaging, 2007, 26, 1471-1479.	1.9	198
13	Evaluating the Atrial Myopathy Underlying Atrial Fibrillation. Circulation, 2015, 132, 278-291.	1.6	196
14	Cardiovascular magnetic resonance phase contrast imaging. Journal of Cardiovascular Magnetic Resonance, 2015, 17, 71.	1.6	184
15	Time-Resolved 3-Dimensional Velocity Mapping in the Thoracic Aorta. Journal of Computer Assisted Tomography, 2004, 28, 459-468.	0.5	183
16	In Vivo Wall Shear Stress Distribution in the Carotid Artery. Circulation: Cardiovascular Imaging, 2010, 3, 647-655.	1.3	181
17	Evaluation of 3D blood flow patterns and wall shear stress in the normal and dilated thoracic aorta using flow-sensitive 4D CMR. Journal of Cardiovascular Magnetic Resonance, 2012, 14, 80.	1.6	171
18	Threeâ€dimensional analysis of segmental wall shear stress in the aorta by flowâ€sensitive fourâ€dimensionalâ€MRI. Journal of Magnetic Resonance Imaging, 2009, 30, 77-84.	1.9	153

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19	4D phase contrast MRI at 3 T: Effect of standard and bloodâ€pool contrast agents on SNR, PCâ€MRA, and blood flow visualization. Magnetic Resonance in Medicine, 2010, 63, 330-338.	1.9	146
20	Time-resolved three-dimensional magnetic resonance velocity mapping of aortic flow in healthy volunteers and patients after valve-sparing aortic root replacement. Journal of Thoracic and Cardiovascular Surgery, 2005, 130, 456-463.	0.4	145
21	Reproducibility of flow and wall shear stress analysis using flowâ€sensitive fourâ€dimensional MRI. Journal of Magnetic Resonance Imaging, 2011, 33, 988-994.	1.9	144
22	Complex Plaques in the Proximal Descending Aorta. Stroke, 2010, 41, 1145-1150.	1.0	138
23	Wall shear stress and flow patterns in the ascending aorta in patients with bicuspid aortic valves differ significantly from tricuspid aortic valves: a prospective study. European Heart Journal Cardiovascular Imaging, 2013, 14, 797-804.	0.5	133
24	Viscous energy loss in the presence of abnormal aortic flow. Magnetic Resonance in Medicine, 2014, 72, 620-628.	1.9	129
25	Aortic Valve Stenosis Alters Expression of Regional Aortic Wall Shear Stress: New Insights From a 4â€Dimensional Flow Magnetic Resonance Imaging Study of 571 Subjects. Journal of the American Heart Association, 2017, 6, .	1.6	126
26	Improved SNR in phase contrast velocimetry with fiveâ€point balanced flow encoding. Magnetic Resonance in Medicine, 2010, 63, 349-355.	1.9	124
27	The Role of Imaging of Flow Patterns by 4D Flow MRI in Aortic Stenosis. JACC: Cardiovascular Imaging, 2019, 12, 252-266.	2.3	120
28	In vivo assessment of wall shear stress in the atherosclerotic aorta using flowâ€sensitive 4D MRI. Magnetic Resonance in Medicine, 2010, 63, 1529-1536.	1.9	108
29	In vivo noninvasive 4D pressure difference mapping in the human aorta: Phantom comparison and application in healthy volunteers and patients. Magnetic Resonance in Medicine, 2011, 66, 1079-1088.	1.9	106
30	Cardiac Magnetic Resonance T2 Mapping in the Monitoring and Follow-up of Acute Cardiac Transplant Rejection. Circulation: Cardiovascular Imaging, 2012, 5, 782-790.	1.3	105
31	Intracardiac flow visualization: current status and future directions. European Heart Journal Cardiovascular Imaging, 2013, 14, 1029-1038.	0.5	105
32	Ageâ€Related Changes of Normal Cerebral and Cardiac Blood Flow in Children and Adults Aged 7ÂMonths to 61ÂYears. Journal of the American Heart Association, 2016, 5, .	1.6	105
33	Aortic valve-mediated wall shear stress is heterogeneous and predicts regional aortic elastic fiber thinning in bicuspid aortic valve-associated aortopathy. Journal of Thoracic and Cardiovascular Surgery, 2018, 156, 2112-2120.e2.	0.4	103
34	Estimation of global aortic pulse wave velocity by flowâ€sensitive 4D MRI. Magnetic Resonance in Medicine, 2010, 63, 1575-1582.	1.9	101
35	Aortic Hemodynamics in Patients With and Without Repair of Aortic Coarctation. Investigative Radiology, 2011, 46, 317-325.	3.5	95
36	Fully automated 3D aortic segmentation of 4D flow MRI for hemodynamic analysis using deep learning. Magnetic Resonance in Medicine, 2020, 84, 2204-2218.	1.9	94

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37	Detailed analysis of myocardial motion in volunteers and patients using high-temporal-resolution MR tissue phase mapping. Journal of Magnetic Resonance Imaging, 2006, 24, 1033-1039.	1.9	92
38	Left Atrial and Left Atrial Appendage 4D Blood Flow Dynamics in Atrial Fibrillation. Circulation: Cardiovascular Imaging, 2016, 9, e004984.	1.3	91
39	Time-resolved, 3-Dimensional Magnetic Resonance Flow Analysis at 3 T. Journal of Computer Assisted Tomography, 2007, 31, 9-15.	0.5	90
40	Interdependencies of aortic arch secondary flow patterns, geometry, and age analysed by 4-dimensional phase contrast magnetic resonance imaging at 3 Tesla. European Radiology, 2012, 22, 1122-1130.	2.3	88
41	Abdominal 4D Flow MR Imaging in a Breath Hold: Combination of Spiral Sampling and Dynamic Compressed Sensing for Highly Accelerated Acquisition. Radiology, 2015, 275, 245-254.	3.6	85
42	Characterization of Abnormal Wall Shear Stress Using 4D Flow MRI in Human Bicuspid Aortopathy. Annals of Biomedical Engineering, 2015, 43, 1385-1397.	1.3	82
43	Blood flow characteristics in the ascending aorta after aortic valve replacementâ€"a pilot study using 4D-flow MRI. International Journal of Cardiology, 2014, 170, 426-433.	0.8	81
44	Reproducibility and interobserver variability of systolic blood flow velocity and 3D wall shear stress derived from 4D flow MRI in the healthy aorta. Journal of Magnetic Resonance Imaging, 2016, 43, 236-248.	1.9	81
45	Highly kâ€tâ€spaceâ€"accelerated phaseâ€contrast MRI. Magnetic Resonance in Medicine, 2008, 60, 1169-1177.	1.9	79
46	Magnetic Resonance Tissue Phase Mapping of Myocardial Motion. Circulation: Cardiovascular Imaging, 2010, 3, 54-64.	1.3	79
47	Time-resolved three-dimensional magnetic resonance velocity mapping of cardiovascular flow paths in volunteers and patients with Fontan circulation. European Journal of Cardio-thoracic Surgery, 2011, 39, 206-212.	0.6	78
48	Evaluation of Aortic Blood Flow and Wall Shear Stress in Aortic Stenosis and Its Association With Left Ventricular Remodeling. Circulation: Cardiovascular Imaging, 2016, 9, e004038.	1.3	77
49	kâ€t GRAPPA accelerated fourâ€dimensional flow MRI in the aorta: Effect on scan time, image quality, and quantification of flow and wall shear stress. Magnetic Resonance in Medicine, 2014, 72, 522-533.	1.9	76
50	Accelerated dual-venc 4D flow MRI for neurovascular applications. Journal of Magnetic Resonance Imaging, 2017, 46, 102-114.	1.9	76
51	Flow-sensitive four-dimensional magnetic resonance imaging: flow patterns in ascending aortic aneurysms. European Journal of Cardio-thoracic Surgery, 2008, 34, 11-16.	0.6	75
52	Normal and Altered Three-dimensional Portal Venous Hemodynamics in Patients with Liver Cirrhosis. Radiology, 2012, 262, 862-873.	3.6	75
53	Analysis of myocardial motion based on velocity measurements with a black blood prepared segmented gradient-echo sequence: Methodology and applications to normal volunteers and patients. Journal of Magnetic Resonance Imaging, 1998, 8, 868-877.	1.9	72
54	Gradient echo imaging. Journal of Magnetic Resonance Imaging, 2012, 35, 1274-1289.	1.9	72

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55	MR and CT Imaging for the Evaluation ofÂPulmonary Hypertension. JACC: Cardiovascular Imaging, 2016, 9, 715-732.	2.3	72
56	Retrograde Embolism From the Descending Aorta. Stroke, 2009, 40, 1505-1508.	1.0	70
57	The American Association for Thoracic Surgery consensus guidelines on bicuspid aortic valveâ€“related aortopathy: Executive summary. Journal of Thoracic and Cardiovascular Surgery, 2018, 156, 473-480.	0.4	70
58	Aortic 4D flow MRI in 2 minutes using compressed sensing, respiratory controlled adaptive kâ€space reordering, and inline reconstruction. Magnetic Resonance in Medicine, 2019, 81, 3675-3690.	1.9	70
59	In vivo visualization and analysis of 3-D hemodynamics in cerebral aneurysms with flow-sensitized 4-D MR imaging at 3ÂT. Neuroradiology, 2008, 50, 473-484.	1.1	69
60	Left atrial flow velocity distribution and flow coherence using fourâ€dimensional FLOW MRI: A pilot study investigating the impact of age and Preâ€and Postintervention atrial fibrillation on atrial hemodynamics. Journal of Magnetic Resonance Imaging, 2013, 38, 580-587.	1.9	67
61	A methodology to detect abnormal relative wall shear stress on the full surface of the thoracic aorta using four-dimensional flow MRI. Magnetic Resonance in Medicine, 2015, 73, 1216-1227.	1.9	67
62	Parallel MRI with extended and averaged GRAPPA kernels (PEAKâ€GRAPPA): Optimized spatiotemporal dynamic imaging. Journal of Magnetic Resonance Imaging, 2008, 28, 1226-1232.	1.9	66
63	Time-resolved magnetic resonance angiography and flow-sensitive 4-dimensional magnetic resonance imaging at 3 Tesla for blood flow and wall shear stress analysis. Journal of Thoracic and Cardiovascular Surgery, 2008, 136, 400-407.	0.4	66
64	Ageâ€related changes in aortic 3D blood flow velocities and wall shear stress: Implications for the identification of altered hemodynamics in patients with aortic valve disease. Journal of Magnetic Resonance Imaging, 2016, 43, 1239-1249.	1.9	66
65	Efficient method for volumetric assessment of peak blood flow velocity using 4D flow MRI. Journal of Magnetic Resonance Imaging, 2016, 44, 1673-1682.	1.9	66
66	Multidirectional flow analysis by cardiovascular magnetic resonance in aneurysm development following repair of aortic coarctation. Journal of Cardiovascular Magnetic Resonance, 2008, 10, 30.	1.6	65
67	Left Atrial 4-Dimensional Flow Magnetic Resonance Imaging. Investigative Radiology, 2016, 51, 147-154.	3.5	65
68	Visualization of hemodynamics in intracranial arteries using time-resolved three-dimensional phase-contrast MRI. Journal of Magnetic Resonance Imaging, 2007, 25, 473-478.	1.9	64
69	Intracranial artery velocity measurement using 4D PC MRI at 3ÂT: comparison with transcranial ultrasound techniques and 2D PC MRI. Neuroradiology, 2013, 55, 389-398.	1.1	62
70	International consensus statement on nomenclature and classification of the congenital bicuspid aortic valve and its aortopathy, for clinical, surgical, interventional and research purposes. European Journal of Cardio-thoracic Surgery, 2021, 60, 448-476.	0.6	61
71	Multiparametric Cardiac Magnetic Resonance Imaging Can Detect AcuteÂCardiac Allograft Rejection AfterÂHeart Transplantation. JACC: Cardiovascular Imaging, 2019, 12, 1632-1641.	2.3	60
72	Analysis of pulse wave velocity in the thoracic aorta by flowâ€sensitive fourâ€dimensional MRI: Reproducibility and correlation with characteristics in patients with aortic atherosclerosis. Journal of Magnetic Resonance Imaging, 2012, 35, 1162-1168.	1.9	59

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73	On flow effects in balanced steady-state free precession imaging: Pictorial description, parameter dependence, and clinical implications. Journal of Magnetic Resonance Imaging, 2004, 20, 697-705.	1.9	58
74	4-D flow magnetic resonance imaging: blood flow quantification compared to 2-D phase-contrast magnetic resonance imaging and Doppler echocardiography. Pediatric Radiology, 2015, 45, 804-813.	1.1	58
75	Four-dimensional flow magnetic resonance imaging-based characterization of aortic morphometry and haemodynamics: impact of age, aortic diameter, and valve morphology. European Heart Journal Cardiovascular Imaging, 2016, 17, 877-884.	0.5	56
76	Longitudinal Evaluation of Aortic Hemodynamics in Marfan Syndrome: New Insights from a 4D Flow Cardiovascular Magnetic Resonance Multi-Year Follow-Up Study. Journal of Cardiovascular Magnetic Resonance, 2016, 19, 33.	1.6	55
77	Visualization of iliac and proximal femoral artery hemodynamics using time-resolved 3D phase contrast MRI at 3T. Journal of Magnetic Resonance Imaging, 2007, 25, 1085-1092.	1.9	54
78	MRâ€based visualization and quantification of threeâ€dimensional flow characteristics in the portal venous system. Journal of Magnetic Resonance Imaging, 2010, 32, 466-475.	1.9	54
79	4D Flow with MRI. Annual Review of Biomedical Engineering, 2020, 22, 103-126.	5.7	53
80	Flowâ€sensitive 4D MRI of the thoracic aorta: Comparison of image quality, quantitative flow, and wall parameters at 1.5 T and 3 T. Journal of Magnetic Resonance Imaging, 2012, 36, 1097-1103.	1.9	52
81	The effect of resolution on viscous dissipation measured with 4D flow MRI in patients with Fontan circulation: Evaluation using computational fluid dynamics. Journal of Biomechanics, 2015, 48, 2984-2989.	0.9	52
82	Distribution of blood flow velocity in the normal aorta: Effect of age and gender. Journal of Magnetic Resonance Imaging, 2018, 47, 487-498.	1.9	52
83	Comparison of 4D flow and 2D velocity-encoded phase contrast MRI sequences for the evaluation of aortic hemodynamics. International Journal of Cardiovascular Imaging, 2016, 32, 1529-1541.	0.7	51
84	Aortic shear stress in patients with bicuspid aortic valve with stenosis and insufficiency. Journal of Thoracic and Cardiovascular Surgery, 2017, 153, 1263-1272.e1.	0.4	50
85	Fast phase contrast cardiac magnetic resonance imaging: Improved assessment and analysis of left ventricular wall motion. Journal of Magnetic Resonance Imaging, 2002, 15, 642-653.	1.9	49
86	International consensus statement on nomenclature and classification of the congenital bicuspid aortic valve and its aortopathy, for clinical, surgical, interventional and research purposes. Journal of Thoracic and Cardiovascular Surgery, 2021, 162, e383-e414.	0.4	47
87	Three-dimensional left atrial blood flow characteristics in patients with atrial fibrillation assessed by 4D flow CMR. European Heart Journal Cardiovascular Imaging, 2016, 17, 1259-1268.	0.5	46
88	Rapid vessel prototyping: vascular modeling using 3t magnetic resonance angiography and rapid prototyping technology. Magnetic Resonance Materials in Physics, Biology, and Medicine, 2005, 18, 288-292.	1.1	45
89	4D Flow Imaging: Current Status to Future Clinical Applications. Current Cardiology Reports, 2014, 16, 481.	1.3	45
90	Volumetric quantification of absolute local normalized helicity in patients with bicuspid aortic valve and aortic dilatation. Magnetic Resonance in Medicine, 2017, 78, 689-701.	1.9	45

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91	High resolution 3T MRI for the assessment of cervical and superficial cranial arteries in giant cell arteritis. Journal of Magnetic Resonance Imaging, 2006, 24, 423-427.	1.9	44
92	A feasibility study to evaluate splanchnic arterial and venous hemodynamics by flow-sensitive 4D MRI compared with Doppler ultrasound in patients with cirrhosis and controls. European Journal of Gastroenterology and Hepatology, 2013, 25, 669-675.	0.8	42
93	Altered aortic shape in bicuspid aortic valve relatives influences blood flow patterns. European Heart Journal Cardiovascular Imaging, 2016, 17, 1239-1247.	0.5	42
94	kâ€t accelerated aortic 4D flow <scp>MRI</scp> in under two minutes: Feasibility and impact of resolution, kâ€space sampling patterns, and respiratory navigator gating on hemodynamic measurements. Magnetic Resonance in Medicine, 2018, 79, 195-207.	1.9	42
95	On the undersampling strategies to accelerate timeâ€resolved 3D imaging using kâ€tâ€GRAPPA. Magnetic Resonance in Medicine, 2011, 66, 966-975.	1.9	41
96	Postoperative pulmonary and aortic 3D haemodynamics in patients after repair of transposition of the great arteries. European Radiology, 2014, 24, 200-208.	2.3	41
97	Multi-modality cerebral aneurysm haemodynamic analysis: in vivo 4D flow MRI, in vitro volumetric particle velocimetry and in silico computational fluid dynamics. Journal of the Royal Society Interface, 2019, 16, 20190465.	1.5	40
98	Thoracic aorta 3D hemodynamics in pediatric and young adult patients with bicuspid aortic valve. Journal of Magnetic Resonance Imaging, 2015, 42, 954-963.	1.9	39
99	Diffuse right ventricular fibrosis in heart failure with preserved ejection fraction and pulmonary hypertension. ESC Heart Failure, 2020, 7, 254-264.	1.4	39
100	Editorial. European Journal of Cardio-thoracic Surgery, 2011, 39, 805-806.	0.6	38
101	Blood flow characteristics in the ascending aorta after TAVI compared to surgical aortic valve replacement. International Journal of Cardiovascular Imaging, 2016, 32, 461-467.	0.7	38
102	Altered aortic 3D hemodynamics and geometry in pediatric Marfan syndrome patients. Journal of Cardiovascular Magnetic Resonance, 2016, 19, 30.	1.6	38
103	Aortic wall shear stress in Marfan syndrome. Magnetic Resonance in Medicine, 2013, 70, 1137-1144.	1.9	37
104	Comparison of Hemodynamics After Aortic Root Replacement Using Valve-Sparing or Bioprosthetic Valved Conduit. Annals of Thoracic Surgery, 2015, 100, 1556-1562.	0.7	37
105	Association of Regional Wall Shear Stress and Progressive Ascending Aorta Dilation in Bicuspid Aortic Valve. JACC: Cardiovascular Imaging, 2022, 15, 33-42.	2.3	37
106	Effect of TIPS placement on portal and splanchnic arterial blood flow in 4-dimensional flow MRI. European Radiology, 2015, 25, 2634-2640.	2.3	36
107	4D flow MRI andT₁-Mapping: Assessment of altered cardiac hemodynamics and extracellular volume fraction in hypertrophic cardiomyopathy. Journal of Magnetic Resonance Imaging, 2016, 43, 107-114.	1.9	36
108	Visualization of multidirectional regional left ventricular dynamics by highâ€temporalâ€resolution tissue phase mapping. Journal of Magnetic Resonance Imaging, 2009, 29, 1043-1052.	1.9	35

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109	Reproducibility study of fourâ€dimensional flow MRI of arterial and portal venous liver hemodynamics: Influence of spatioâ€temporal resolution. Magnetic Resonance in Medicine, 2014, 72, 477-484.	1.9	35
110	Intracardiac 4D Flow MRI in Congenital Heart Disease: Recommendations on Behalf of the ISMRM Flow & Motion Study Group. Journal of Magnetic Resonance Imaging, 2019, 50, spcone.	1.9	35
111	Cardiac phase contrast gradient echo MRI: measurement of myocardial wall motion in healthy volunteers and patients. International Journal of Cardiovascular Imaging, 1999, 15, 441-452.	0.2	34
112	A quantitative comparison of regional myocardial motion in mice, rabbits and humans using in-vivo phase contrast CMR. Journal of Cardiovascular Magnetic Resonance, 2012, 14, 87.	1.6	34
113	Detection and Hemodynamic Evaluation of Flap Fenestrations in Type B Aortic Dissection with 4D Flow MRI: Comparison with Conventional MRI and CT Angiography. Radiology: Cardiothoracic Imaging, 2019, 1, e180009.	0.9	34
114	Assessment of left and right atrial 3D hemodynamics in patients with atrial fibrillation: a 4D flow MRI study. International Journal of Cardiovascular Imaging, 2016, 32, 807-815.	0.7	33
115	Perioperative evaluation of regional aortic wall shear stress patterns in patients undergoing aortic valve and/or proximal thoracic aortic replacement. Journal of Thoracic and Cardiovascular Surgery, 2018, 155, 2277-2286.e2.	0.4	33
116	Intracardiac 4D Flow MRI in Congenital Heart Disease: Recommendations on Behalf of the ISMRM Flow & Motion Study Group. Journal of Magnetic Resonance Imaging, 2019, 50, 677-681.	1.9	32
117	Semiâ€automated analysis of 4D flow MRI to assess the hemodynamic impact of intracranial atherosclerotic disease. Magnetic Resonance in Medicine, 2019, 82, 749-762.	1.9	32
118	Plaques in the descending aorta: A new risk factor for stroke? Visualization of potential embolization pathways by 4D MRI. Journal of Magnetic Resonance Imaging, 2007, 26, 1651-1655.	1.9	31
119	Spiral reconstruction by regridding to a large rectilinear matrix: A practical solution for routine systems. Journal of Magnetic Resonance Imaging, 1999, 10, 84-92.	1.9	30
120	Improved Semiautomated 4D Flow MRI Analysis in the Aorta in Patients With Congenital Aortic Valve Anomalies Versus Tricuspid Aortic Valves. Journal of Computer Assisted Tomography, 2016, 40, 102-108.	0.5	30
121	5D Flow MRI: A Fully Self-gated, Free-running Framework for Cardiac and Respiratory Motionâ€“resolved 3D Hemodynamics. Radiology: Cardiothoracic Imaging, 2020, 2, e200219.	0.9	30
122	Prognostic Value of Myocardial Extracellular Volume Fraction and T2-mapping in Heart Transplant Patients. JACC: Cardiovascular Imaging, 2020, 13, 1521-1530.	2.3	29
123	Co-registration of the distribution of wall shear stress and 140 complex plaques of the aorta. Magnetic Resonance Imaging, 2013, 31, 1156-1162.	1.0	28
124	Myocardial T2â€mapping and velocity mapping: Changes in regional left ventricular structure and function after heart transplantation. Magnetic Resonance in Medicine, 2013, 70, 517-526.	1.9	28
125	Cerebral arteriovenous malformation: Complex 3D hemodynamics and 3D blood flow alterations during staged embolization. Journal of Magnetic Resonance Imaging, 2013, 38, 946-950.	1.9	28
126	Haemodynamic outcome at four-dimensional flow magnetic resonance imaging following valve-sparing aortic root replacement with tricuspid and bicuspid valve morphology. European Journal of Cardio-thoracic Surgery, 2014, 45, 818-825.	0.6	28

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127	From unicuspid to quadricuspid: Influence of aortic valve morphology on aortic threeâ€dimensional hemodynamics. Journal of Magnetic Resonance Imaging, 2014, 40, 1342-1346.	1.9	28
128	Standardized Evaluation of Cerebral Arteriovenous Malformations Using Flow Distribution Network Graphs and Dualâ€venc 4D Flow MRI. Journal of Magnetic Resonance Imaging, 2019, 50, 1718-1730.	1.9	28
129	Quantification and comparison of 4Dâ€flow MRIâ€derived wall shear stress and MREâ€derived wall stiffness of the abdominal aorta. Journal of Magnetic Resonance Imaging, 2017, 45, 771-778.	1.9	27
130	Parametric Hemodynamic 4D Flow MRI Maps for the Characterization of Chronic Thoracic Descending Aortic Dissection. Journal of Magnetic Resonance Imaging, 2020, 51, 1357-1368.	1.9	27
131	Evaluation of blood flow distribution asymmetry and vascular geometry in patients with Fontan circulation using 4-D flow MRI. Pediatric Radiology, 2016, 46, 1507-1519.	1.1	26
132	Improved method for quantification of regional cardiac function in mice using phaseâ€contrast MRI. Magnetic Resonance in Medicine, 2012, 67, 541-551.	1.9	25
133	Towards highâ€resolution 4D flow MRI in the human aorta using ktâ€GRAPPA and B1+â€‰shimming at 7T. Journal of Magnetic Resonance Imaging, 2016, 44, 486-499.	1.9	25
134	International Consensus Statement on Nomenclature and Classification of the Congenital Bicuspid Aortic Valve and Its Aortopathy, for Clinical, Surgical, Interventional and Research Purposes. Annals of Thoracic Surgery, 2021, 112, e203-e235.	0.7	25
135	Three-dimensional magnetic resonance flow analysis in a ventricular assist device. Journal of Thoracic and Cardiovascular Surgery, 2007, 134, 1471-1476.	0.4	24
136	Evaluation of aortic stenosis severity using 4D flow jet shear layer detection for the measurement of valve effective orifice area. Magnetic Resonance Imaging, 2014, 32, 891-898.	1.0	24
137	T1 mapping in children and young adults with hypertrophic cardiomyopathy. International Journal of Cardiovascular Imaging, 2017, 33, 109-117.	0.7	24
138	Reproducibility of cine displacement encoding with stimulated echoes (DENSE) in human subjects. Magnetic Resonance Imaging, 2017, 35, 148-153.	1.0	24
139	Valve mediated hemodynamics and their association with distal ascending aortic diameter in bicuspid aortic valve subjects. Journal of Magnetic Resonance Imaging, 2018, 47, 246-254.	1.9	24
140	4D flow MRI, cardiac function, and T₁â€mapping: Association of valveâ€mediated changes in aortic hemodynamics with left ventricular remodeling. Journal of Magnetic Resonance Imaging, 2018, 48, 121-131.	1.9	24
141	Hemodynamic measurements with an abdominal 4D flow MRI sequence with spiral sampling and compressed sensing in patients with chronic liver disease. Journal of Magnetic Resonance Imaging, 2019, 49, 994-1005.	1.9	24
142	In Vivo 3-Dimensional Flow Connectivity Mapping After Extracardiac Total Cavopulmonary Connection. Circulation, 2008, 118, e16-7.	1.6	22
143	Phase-locked 3D3C-MRV measurements in a bi-stable fluidic oscillator. Experiments in Fluids, 2013, 54, 1.	1.1	22
144	Three-dimensional haemodynamics in patients with obstructive and non-obstructive hypertrophic cardiomyopathy assessed by cardiac magnetic resonance. European Heart Journal Cardiovascular Imaging, 2015, 16, 29-36.	0.5	22

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145	4-D flow magnetic-resonance-imaging-derived energetic biomarkers are abnormal in children with repaired tetralogy of Fallot and associated with disease severity. Pediatric Radiology, 2019, 49, 308-317.	1.1	22
146	Gluteal Vein Anatomy: Location, Caliber, Impact of Patient Positioning, and Implications for Fat Grafting. Aesthetic Surgery Journal, 2020, 40, 642-649.	0.9	22
147	Four-dimensional Virtual Catheter: Noninvasive Assessment of Intra-aortic Hemodynamics in Bicuspid Aortic Valve Disease. Radiology, 2019, 293, 541-550.	3.6	21
148	Visceral adiposity, muscle composition, and exercise tolerance in heart failure with preserved ejection fraction. ESC Heart Failure, 2021, 8, 2535-2545.	1.4	21
149	30-minute CMR for common clinical indications:ÂaÂSociety for Cardiovascular Magnetic Resonance white paper. Journal of Cardiovascular Magnetic Resonance, 2022, 24, 13.	1.6	21
150	Three-Dimensional Flow Characteristics in Aortic Coarctation and Poststenotic Dilatation. Journal of Computer Assisted Tomography, 2009, 33, 776-778.	0.5	20
151	Usefulness of 4D MRI Flow Imaging to Control TIPS Function. American Journal of Gastroenterology, 2012, 107, 327-328.	0.2	20
152	4D flow MR imaging of the portal venous system: a feasibility study in children. European Radiology, 2017, 27, 832-840.	2.3	20
153	Acute Cerebral Venous Thrombosis. Stroke, 2017, 48, 671-677.	1.0	20
154	Aortic stenosis exacerbates flow aberrations related to the bicuspid aortic valve fusion pattern and the aortopathy phenotype. European Journal of Cardio-thoracic Surgery, 2019, 55, 534-542.	0.6	20
155	Hemodynamic evaluation in patients with transposition of the great arteries after the arterial switch operation: 4D flow and 2D phase contrast cardiovascular magnetic resonance compared with Doppler echocardiography. Journal of Cardiovascular Magnetic Resonance, 2016, 18, 59.	1.6	19
156	Interval changes in aortic peak velocity and wall shear stress in patients with bicuspid aortic valve disease. International Journal of Cardiovascular Imaging, 2019, 35, 1925-1934.	0.7	19
157	K-t GRAPPA-accelerated 4D flow MRI of liver hemodynamics: influence of different acceleration factors on qualitative and quantitative assessment of blood flow. Magnetic Resonance Materials in Physics, Biology, and Medicine, 2015, 28, 149-159.	1.1	18
158	Reduction of aberrant aortic haemodynamics following aortic root replacement with a mechanical valved conduitâ€. Interactive Cardiovascular and Thoracic Surgery, 2016, 23, 416-423.	0.5	18
159	Automated Assessment of Left Ventricular Function and Mass Using Heart Deformation Analysis:. Academic Radiology, 2016, 23, 321-325.	1.3	18
160	Influence of beta-blocker therapy on aortic blood flow in patients with bicuspid aortic valve. International Journal of Cardiovascular Imaging, 2016, 32, 621-628.	0.7	18
161	In Vivo Assessment of the Impact of Regional Intracranial Atherosclerotic Lesions on Brain Arterial 3D Hemodynamics. American Journal of Neuroradiology, 2017, 38, 515-522.	1.2	18
162	Highly accelerated aortic 4D flow MRI using compressed sensing: Performance at different acceleration factors in patients with aortic disease. Magnetic Resonance in Medicine, 2021, 85, 2174-2187.	1.9	18

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163	Evaluation of Pulmonary Hypertension Using <scp>4D</scp> Flow <scp>MRI</scp>. Journal of Magnetic Resonance Imaging, 2022, 56, 234-245.	1.9	18
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165	Accelerated real-time cardiac MRI using iterative sparse SENSE reconstruction: comparing performance in patients with sinus rhythm and atrial fibrillation. European Radiology, 2018, 28, 3088-3096.	2.3	17
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