Michael Markl

List of Publications by Citations

287 papers	10,359 citations	55 h-index	93 g-index
314 ext. papers	12,479 ext. citations	5.1 avg, IF	6.17 L-index

#	Paper	IF	Citations
287	4D flow cardiovascular magnetic resonance consensus statement. *Journal of Cardiovascular Magnetic Resonance*, **2015**, 17, 72	6.9	446
286	4D flow MRI. *Journal of Magnetic Resonance Imaging*, **2012**, 36, 1015-36	5.6	433
285	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, 824-31	5.6	318
284	Comprehensive 4D velocity mapping of the heart and great vessels by cardiovascular magnetic resonance. *Journal of Cardiovascular Magnetic Resonance*, **2011**, 13, 7	6.9	314
283	Time-resolved three-dimensional phase-contrast MRI. *Journal of Magnetic Resonance Imaging*, **2003**, 17, 499-506	5.6	311
282	Bicuspid aortic valve is associated with altered wall shear stress in the ascending aorta. *Circulation: Cardiovascular Imaging*, **2012**, 5, 457-66	3.9	305
281	Bicuspid aortic cusp fusion morphology alters aortic three-dimensional outflow patterns, wall shear stress, and expression of aortopathy. *Circulation*, **2014**, 129, 673-82	16.7	274
280	Aortic dilation in bicuspid aortic valve disease: flow pattern is a major contributor and differs with valve fusion type. *Circulation: Cardiovascular Imaging*, **2013**, 6, 499-507	3.9	254
279	Valve-Related Hemodynamics Mediate Human Bicuspid Aortopathy: Insights From Wall Shear Stress Mapping. *Journal of the American College of Cardiology*, **2015**, 66, 892-900	15.1	251
278	Comparison of flow patterns in ascending aortic aneurysms and volunteers using four-dimensional magnetic resonance velocity mapping. *Journal of Magnetic Resonance Imaging*, **2007**, 26, 1471-9	5.6	167
277	Time-resolved 3-dimensional velocity mapping in the thoracic aorta: visualization of 3-directional blood flow patterns in healthy volunteers and patients. *Journal of Computer Assisted Tomography*, **2004**, 28, 459-68	2.2	163
276	4D flow imaging with MRI. *Cardiovascular Diagnosis and Therapy*, **2014**, 4, 173-92	2.6	151
275	In vivo wall shear stress distribution in the carotid artery: effect of bifurcation geometry, internal carotid artery stenosis, and recanalization therapy. *Circulation: Cardiovascular Imaging*, **2010**, 3, 647-55	3.9	145
274	Evaluating the Atrial Myopathy Underlying Atrial Fibrillation: Identifying the Arrhythmogenic and Thrombogenic Substrate. *Circulation*, **2015**, 132, 278-91	16.7	138
273	Cardiovascular magnetic resonance phase contrast imaging. *Journal of Cardiovascular Magnetic Resonance*, **2015**, 17, 71	6.9	135
272	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, 456-63	1.5	132
271	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, 84	6.9	130

270	4D phase contrast MRI at 3 T: effect of standard and blood-pool contrast agents on SNR, PC-MRA, and blood flow visualization. *Magnetic Resonance in Medicine*, **2010**, 63, 330-8	4.4	128
269	Three-dimensional analysis of segmental wall shear stress in the aorta by flow-sensitive four-dimensional-MRI. *Journal of Magnetic Resonance Imaging*, **2009**, 30, 77-84	5.6	124
268	Reproducibility of flow and wall shear stress analysis using flow-sensitive four-dimensional MRI. *Journal of Magnetic Resonance Imaging*, **2011**, 33, 988-94	5.6	122
267	Complex plaques in the proximal descending aorta: an underestimated embolic source of stroke. *Stroke*, **2010**, 41, 1145-50	6.7	117
266	The American Association for Thoracic Surgery consensus guidelines on bicuspid aortic valve-related aortopathy: Full online-only version. *Journal of Thoracic and Cardiovascular Surgery*, **2018**, 156, e41-e74	1.5	109
265	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	4.1	106
264	In vivo assessment of wall shear stress in the atherosclerotic aorta using flow-sensitive 4D MRI. *Magnetic Resonance in Medicine*, **2010**, 63, 1529-36	4.4	94
263	Improved SNR in phase contrast velocimetry with five-point balanced flow encoding. *Magnetic Resonance in Medicine*, **2010**, 63, 349-55	4.4	93
262	Viscous energy loss in the presence of abnormal aortic flow. *Magnetic Resonance in Medicine*, **2014**, 72, 620-8	4.4	90
261	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, 1079-88	4.4	85
260	Detailed analysis of myocardial motion in volunteers and patients using high-temporal-resolution MR tissue phase mapping. *Journal of Magnetic Resonance Imaging*, **2006**, 24, 1033-9	5.6	85
259	Aortic hemodynamics in patients with and without repair of aortic coarctation: in vivo analysis by 4D flow-sensitive magnetic resonance imaging. *Investigative Radiology*, **2011**, 46, 317-25	10.1	84
258	Aortic Valve Stenosis Alters Expression of Regional Aortic Wall Shear Stress: New Insights From a 4-Dimensional Flow Magnetic Resonance Imaging Study of 571 Subjects. *Journal of the American Heart Association*, **2017**, 6,	6	81
257	Intracardiac flow visualization: current status and future directions. *European Heart Journal Cardiovascular Imaging*, **2013**, 14, 1029-38	4.1	81
256	Time-resolved, 3-dimensional magnetic resonance flow analysis at 3 T: visualization of normal and pathological aortic vascular hemodynamics. *Journal of Computer Assisted Tomography*, **2007**, 31, 9-15	2.2	81
255	Cardiac magnetic resonance T2 mapping in the monitoring and follow-up of acute cardiac transplant rejection: a pilot study. *Circulation: Cardiovascular Imaging*, **2012**, 5, 782-90	3.9	79
254	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, 1122-30	8	77
253	Estimation of global aortic pulse wave velocity by flow-sensitive 4D MRI. *Magnetic Resonance in Medicine*, **2010**, 63, 1575-82	4.4	76

252	Age-Related Changes of Normal Cerebral and Cardiac Blood Flow in Children and Adults Aged 7 Months to 61 Years. *Journal of the American Heart Association*, **2016**, 5,	6	75
251	Magnetic resonance tissue phase mapping of myocardial motion: new insight in age and gender. *Circulation: Cardiovascular Imaging*, **2010**, 3, 54-64	3.9	70
250	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, 206-12	3	70
249	Highly k-t-space-accelerated phase-contrast MRI. *Magnetic Resonance in Medicine*, **2008**, 60, 1169-77	4.4	69
248	k-t GRAPPA accelerated four-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, 522-33	4.4	67
247	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, 868-77	5.6	66
246	The Role of Imaging of Flow Patterns by 4D Flow MRI in Aortic Stenosis. *JACC: Cardiovascular Imaging*, **2019**, 12, 252-266	8.4	64
245	In vivo visualization and analysis of 3-D hemodynamics in cerebral aneurysms with flow-sensitized 4-D MR imaging at 3 T. *Neuroradiology*, **2008**, 50, 473-84	3.2	64
244	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, 236-48	5.6	64
243	Abdominal 4D flow MR imaging in a breath hold: combination of spiral sampling and dynamic compressed sensing for highly accelerated acquisition. *Radiology*, **2015**, 275, 245-54	20.5	62
242	Blood flow characteristics in the ascending aorta after aortic valve replacement--a pilot study using 4D-flow MRI. *International Journal of Cardiology*, **2014**, 170, 426-33	3.2	62
241	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, 400-7	1.5	62
240	Characterization of abnormal wall shear stress using 4D flow MRI in human bicuspid aortopathy. *Annals of Biomedical Engineering*, **2015**, 43, 1385-97	4.7	61
239	Retrograde embolism from the descending aorta: visualization by multidirectional 3D velocity mapping in cryptogenic stroke. *Stroke*, **2009**, 40, 1505-8	6.7	59
238	Flow-sensitive four-dimensional magnetic resonance imaging: flow patterns in ascending aortic aneurysms. *European Journal of Cardio-thoracic Surgery*, **2008**, 34, 11-6	3	59
237	Normal and altered three-dimensional portal venous hemodynamics in patients with liver cirrhosis. *Radiology*, **2012**, 262, 862-73	20.5	58
236	Parallel MRI with extended and averaged GRAPPA kernels (PEAK-GRAPPA): optimized spatiotemporal dynamic imaging. *Journal of Magnetic Resonance Imaging*, **2008**, 28, 1226-32	5.6	57
235	MR and CT Imaging for the Evaluation of Pulmonary Hypertension. *JACC: Cardiovascular Imaging*, **2016**, 9, 715-32	8.4	56

234	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, 1216-27	4.4	55
233	Visualization of hemodynamics in intracranial arteries using time-resolved three-dimensional phase-contrast MRI. *Journal of Magnetic Resonance Imaging*, **2007**, 25, 473-8	5.6	55
232	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, 877-84	4.1	53
231	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	3.9	52
230	Left Atrial and Left Atrial Appendage 4D Blood Flow Dynamics in Atrial Fibrillation. *Circulation: Cardiovascular Imaging*, **2016**, 9, e004984	3.9	51
229	Multidirectional flow analysis by cardiovascular magnetic resonance in aneurysm development following repair of aortic coarctation. *Journal of Cardiovascular Magnetic Resonance*, **2008**, 10, 30	6.9	51
228	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	1.5	50
227	Left atrial flow velocity distribution and flow coherence using four-dimensional FLOW MRI: a pilot study investigating the impact of age and Pre- and Postintervention atrial fibrillation on atrial hemodynamics. *Journal of Magnetic Resonance Imaging*, **2013**, 38, 580-7	5.6	50
226	Efficient method for volumetric assessment of peak blood flow velocity using 4D flow MRI. *Journal of Magnetic Resonance Imaging*, **2016**, 44, 1673-1682	5.6	48
225	Flow-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, 1097-103	5.6	47
224	Visualization of iliac and proximal femoral artery hemodynamics using time-resolved 3D phase contrast MRI at 3T. *Journal of Magnetic Resonance Imaging*, **2007**, 25, 1085-92	5.6	47
223	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	5.6	47
222	Intracranial artery velocity measurement using 4D PC MRI at 3 T: comparison with transcranial ultrasound techniques and 2D PC MRI. *Neuroradiology*, **2013**, 55, 389-98	3.2	46
221	Fast phase contrast cardiac magnetic resonance imaging: improved assessment and analysis of left ventricular wall motion. *Journal of Magnetic Resonance Imaging*, **2002**, 15, 642-53	5.6	46
220	Age-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, 1239-49	5.6	45
219	Accelerated dual-venc 4D flow MRI for neurovascular applications. *Journal of Magnetic Resonance Imaging*, **2017**, 46, 102-114	5.6	44
218	Analysis of pulse wave velocity in the thoracic aorta by flow-sensitive four-dimensional MRI: reproducibility and correlation with characteristics in patients with aortic atherosclerosis. *Journal of Magnetic Resonance Imaging*, **2012**, 35, 1162-8	5.6	44
217	MR-based visualization and quantification of three-dimensional flow characteristics in the portal venous system. *Journal of Magnetic Resonance Imaging*, **2010**, 32, 466-75	5.6	43

216	The American Association for Thoracic Surgery consensus guidelines on bicuspid aortic valve-related aortopathy: Executive summary. *Journal of Thoracic and Cardiovascular Surgery*, **2018**, 156, 473-480	1.5	42
215	Aortic 4D flow MRI in 2 minutes using compressed sensing, respiratory controlled adaptive k-space reordering, and inline reconstruction. *Magnetic Resonance in Medicine*, **2019**, 81, 3675-3690	4.4	41
214	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, 1529-41	2.5	41
213	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, 804-13	2.8	40
212	4D flow imaging: current status to future clinical applications. *Current Cardiology Reports*, **2014**, 16, 481	4.2	40
211	Gradient echo imaging. *Journal of Magnetic Resonance Imaging*, **2012**, 35, 1274-89	5.6	40
210	On the undersampling strategies to accelerate time-resolved 3D imaging using k-t-GRAPPA. *Magnetic Resonance in Medicine*, **2011**, 66, 966-75	4.4	39
209	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, 2984-9	2.9	38
208	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*, **2017**, 19, 33	6.9	38
207	Rapid vessel prototyping: vascular modeling using 3t magnetic resonance angiography and rapid prototyping technology. *Magnetic Resonance Materials in Physics, Biology, and Medicine*, **2005**, 18, 288-92	2.8	38
206	Postoperative pulmonary and aortic 3D haemodynamics in patients after repair of transposition of the great arteries. *European Radiology*, **2014**, 24, 200-8	8	36
205	Aortic shear stress in patients with bicuspid aortic valve with stenosis and insufficiency. *Journal of Thoracic and Cardiovascular Surgery*, **2017**, 153, 1263-1272.e1	1.5	35
204	Fully automated 3D aortic segmentation of 4D flow MRI for hemodynamic analysis using deep learning. *Magnetic Resonance in Medicine*, **2020**, 84, 2204-2218	4.4	35
203	k-t accelerated aortic 4D flow MRI in under two minutes: Feasibility and impact of resolution, k-space sampling patterns, and respiratory navigator gating on hemodynamic measurements. *Magnetic Resonance in Medicine*, **2018**, 79, 195-207	4.4	35
202	High resolution 3T MRI for the assessment of cervical and superficial cranial arteries in giant cell arteritis. *Journal of Magnetic Resonance Imaging*, **2006**, 24, 423-7	5.6	34
201	Visualization of multidirectional regional left ventricular dynamics by high-temporal-resolution tissue phase mapping. *Journal of Magnetic Resonance Imaging*, **2009**, 29, 1043-52	5.6	33
200	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, 669-75	2.2	32
199	Cardiac phase contrast gradient echo MRI: measurement of myocardial wall motion in healthy volunteers and patients. *International Journal of Cardiovascular Imaging*, **1999**, 15, 441-52		32

198	Thoracic aorta 3D hemodynamics in pediatric and young adult patients with bicuspid aortic valve. *Journal of Magnetic Resonance Imaging*, **2015**, 42, 954-63	5.6	30
197	Aortic wall shear stress in Marfan syndrome. *Magnetic Resonance in Medicine*, **2013**, 70, 1137-44	4.4	30
196	Multiparametric Cardiac Magnetic Resonance Imaging Can Detect Acute Cardiac Allograft Rejection After Heart Transplantation. *JACC: Cardiovascular Imaging*, **2019**, 12, 1632-1641	8.4	29
195	Comparison of Hemodynamics After Aortic Root Replacement Using Valve-Sparing or Bioprosthetic Valved Conduit. *Annals of Thoracic Surgery*, **2015**, 100, 1556-62	2.7	29
194	Distribution of blood flow velocity in the normal aorta: Effect of age and gender. *Journal of Magnetic Resonance Imaging*, **2018**, 47, 487-498	5.6	29
193	Blood flow characteristics in the ascending aorta after TAVI compared to surgical aortic valve replacement. *International Journal of Cardiovascular Imaging*, **2016**, 32, 461-7	2.5	29
192	Left Atrial 4-Dimensional Flow Magnetic Resonance Imaging: Stasis and Velocity Mapping in Patients With Atrial Fibrillation. *Investigative Radiology*, **2016**, 51, 147-54	10.1	28
191	Volumetric quantification of absolute local normalized helicity in patients with bicuspid aortic valve and aortic dilatation. *Magnetic Resonance in Medicine*, **2017**, 78, 689-701	4.4	28
190	Altered aortic shape in bicuspid aortic valve relatives influences blood flow patterns. *European Heart Journal Cardiovascular Imaging*, **2016**, 17, 1239-1247	4.1	28
189	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	6.9	27
188	Spiral reconstruction by regridding to a large rectilinear matrix: a practical solution for routine systems. *Journal of Magnetic Resonance Imaging*, **1999**, 10, 84-92	5.6	27
187	Diffuse right ventricular fibrosis in heart failure with preserved ejection fraction and pulmonary hypertension. *ESC Heart Failure*, **2020**, 7, 253-263	3.7	27
186	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	4.1	26
185	Altered aortic 3D hemodynamics and geometry in pediatric Marfan syndrome patients. *Journal of Cardiovascular Magnetic Resonance*, **2017**, 19, 30	6.9	26
184	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, 1651-5	5.6	26
183	Effect of TIPS placement on portal and splanchnic arterial blood flow in 4-dimensional flow MRI. *European Radiology*, **2015**, 25, 2634-40	8	25
182	Improved method for quantification of regional cardiac function in mice using phase-contrast MRI. *Magnetic Resonance in Medicine*, **2012**, 67, 541-51	4.4	25
181	Reproducibility study of four-dimensional flow MRI of arterial and portal venous liver hemodynamics: influence of spatio-temporal resolution. *Magnetic Resonance in Medicine*, **2014**, 72, 477-84	4.4	25

180	Myocardial T2-mapping and velocity mapping: changes in regional left ventricular structure and function after heart transplantation. *Magnetic Resonance in Medicine*, **2013**, 70, 517-26	4.4	25
179	4D flow MRI and T1 -Mapping: Assessment of altered cardiac hemodynamics and extracellular volume fraction in hypertrophic cardiomyopathy. *Journal of Magnetic Resonance Imaging*, **2016**, 43, 107-14	5.6	25
178	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, 807-15	2.5	25
177	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, 102-8	2.2	24
176	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, 818-25	3	24
175	Detection and Hemodynamic Evaluation of Flap Fenestrations in Type B Aortic Dissection with 4D Flow MRI: Comparison with Conventional MRI and CTA. *Radiology: Cardiothoracic Imaging*, **2019**, 1,	8.3	23
174	Quantification and comparison of 4D-flow MRI-derived wall shear stress and MRE-derived wall stiffness of the abdominal aorta. *Journal of Magnetic Resonance Imaging*, **2017**, 45, 771-778	5.6	23
173	Cerebral arteriovenous malformation: complex 3D hemodynamics and 3D blood flow alterations during staged embolization. *Journal of Magnetic Resonance Imaging*, **2013**, 38, 946-50	5.6	23
172	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	1.5	22
171	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	5.6	22
170	Co-registration of the distribution of wall shear stress and 140 complex plaques of the aorta. *Magnetic Resonance Imaging*, **2013**, 31, 1156-62	3.3	22
169	Three-dimensional magnetic resonance flow analysis in a ventricular assist device. *Journal of Thoracic and Cardiovascular Surgery*, **2007**, 134, 1471-6	1.5	22
168	Evaluation of blood flow distribution asymmetry and vascular geometry in patients with Fontan circulation using 4-D flow MRI. *Pediatric Radiology*, **2016**, 46, 1507-19	2.8	21
167	Images in cardiovascular medicine. In vivo 3-dimensional flow connectivity mapping after extracardiac total cavopulmonary connection. *Circulation*, **2008**, 118, e16-7	16.7	21
166	Towards high-resolution 4D flow MRI in the human aorta using kt-GRAPPA and B1+ shimming at 7T. *Journal of Magnetic Resonance Imaging*, **2016**, 44, 486-99	5.6	21
165	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-spcone	5.6	20
164	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, 891-8	3.3	19
163	Phase-locked 3D3C-MRV measurements in a bi-stable fluidic oscillator. *Experiments in Fluids*, **2013**, 54, 1	2.5	19

162	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	4.1	19
161	Three-dimensional flow characteristics in aortic coarctation and poststenotic dilatation. *Journal of Computer Assisted Tomography*, **2009**, 33, 776-8	2.2	19
160	4D flow MRI, cardiac function, and T -mapping: Association of valve-mediated changes in aortic hemodynamics with left ventricular remodeling. *Journal of Magnetic Resonance Imaging*, **2018**, 48, 121-131	5.6	19
159	Multi-modality cerebral aneurysm haemodynamic analysis: 4D flow MRI, volumetric particle velocimetry and computational fluid dynamics. *Journal of the Royal Society Interface*, **2019**, 16, 20190465	4.1	18
158	Automated Assessment of Left Ventricular Function and Mass Using Heart Deformation Analysis: Initial Experience in 160 Older Adults. *Academic Radiology*, **2016**, 23, 321-5	4.3	18
157	From unicuspid to quadricuspid: influence of aortic valve morphology on aortic three-dimensional hemodynamics. *Journal of Magnetic Resonance Imaging*, **2014**, 40, 1342-6	5.6	18
156	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	6.9	17
155	Reproducibility of cine displacement encoding with stimulated echoes (DENSE) in human subjects. *Magnetic Resonance Imaging*, **2017**, 35, 148-153	3.3	17
154	Assessment of altered three-dimensional blood characteristics in aortic disease by velocity distribution analysis. *Magnetic Resonance in Medicine*, **2015**, 74, 817-25	4.4	17
153	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	5.6	16
152	Usefulness of 4D MRI flow imaging to control TIPS function. *American Journal of Gastroenterology*, **2012**, 107, 327-8	0.7	16
151	Parametric Hemodynamic 4D Flow MRI Maps for the Characterization of Chronic Thoracic Descending Aortic Dissection. *Journal of Magnetic Resonance Imaging*, **2020**, 51, 1357-1368	5.6	16
150	4D Flow with MRI. *Annual Review of Biomedical Engineering*, **2020**, 22, 103-126	12	15
149	Reduction of aberrant aortic haemodynamics following aortic root replacement with a mechanical valved conduit. *Interactive Cardiovascular and Thoracic Surgery*, **2016**, 23, 416-23	1.8	15
148	Influence of beta-blocker therapy on aortic blood flow in patients with bicuspid aortic valve. *International Journal of Cardiovascular Imaging*, **2016**, 32, 621-8	2.5	15
147	Acute Cerebral Venous Thrombosis: Three-Dimensional Visualization and Quantification of Hemodynamic Alterations Using 4-Dimensional Flow Magnetic Resonance Imaging. *Stroke*, **2017**, 48, 671-677	6.7	14
146	Sclerotic aortic valve: flow-sensitive 4-dimensional magnetic resonance imaging reveals 3 distinct flow-pattern changes. *Circulation*, **2007**, 116, e336-7	16.7	14
145	Heart deformation analysis for automated quantification of cardiac function and regional myocardial motion patterns: A proof of concept study in patients with cardiomyopathy and healthy subjects. *European Journal of Radiology*, **2016**, 85, 1811-1817	4.7	14

144	Semi-automated analysis of 4D flow MRI to assess the hemodynamic impact of intracranial atherosclerotic disease. *Magnetic Resonance in Medicine*, **2019**, 82, 749-762	4.4	13
143	Extracellular volume fraction is more closely associated with altered regional left ventricular velocities than left ventricular ejection fraction in nonischemic cardiomyopathy. *Circulation: Cardiovascular Imaging*, **2015**, 8,	3.9	13
142	Heart deformation analysis: measuring regional myocardial velocity with MR imaging. *International Journal of Cardiovascular Imaging*, **2016**, 32, 1103-11	2.5	13
141	5D Flow MRI: A Fully Self-gated, Free-running Framework for Cardiac and Respiratory Motion-resolved 3D Hemodynamics. *Radiology: Cardiothoracic Imaging*, **2020**, 2, e200219	8.3	13
140	4D flow MR imaging of the portal venous system: a feasibility study in children. *European Radiology*, **2017**, 27, 832-840	8	12
139	Magnetic resonance imaging 4-D flow-based analysis of aortic hemodynamics in Turner syndrome. *Pediatric Radiology*, **2017**, 47, 382-390	2.8	12
138	Standardized Evaluation of Cerebral Arteriovenous Malformations Using Flow Distribution Network Graphs and Dual-venc 4D Flow MRI. *Journal of Magnetic Resonance Imaging*, **2019**, 50, 1718-1730	5.6	12
137	Improved respiratory navigator gating for thoracic 4D flow MRI. *Magnetic Resonance Imaging*, **2015**, 33, 992-9	3.3	12
136	Prognostic Value of Myocardial Extracellular Volume Fraction and T2-mapping in Heart Transplant Patients. *JACC: Cardiovascular Imaging*, **2020**, 13, 1521-1530	8.4	12
135	Voxel-by-voxel 4D flow MRI-based assessment of regional reverse flow in the aorta. *Journal of Magnetic Resonance Imaging*, **2018**, 47, 1276-1286	5.6	12
134	Cardiac Structure-Function MRI in Patients After Heart Transplantation. *Journal of Magnetic Resonance Imaging*, **2019**, 49, 678-687	5.6	12
133	T1 mapping in children and young adults with hypertrophic cardiomyopathy. *International Journal of Cardiovascular Imaging*, **2017**, 33, 109-117	2.5	12
132	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, 149-59	2.8	12
131	Autocalibrated multiband CAIPIRINHA with through-time encoding: Proof of principle and application to cardiac tissue phase mapping. *Magnetic Resonance in Medicine*, **2019**, 81, 1016-1030	4.4	12
130	Reproducibility and observer variability of tissue phase mapping for the quantification of regional myocardial velocities. *International Journal of Cardiovascular Imaging*, **2016**, 32, 1227-34	2.5	11
129	Evaluation of a 32-channel versus a 12-channel head coil for high-resolution post-contrast MRI in giant cell arteritis (GCA) at 3T. *European Journal of Radiology*, **2014**, 83, 1875-80	4.7	11
128	Integrated Regional Cardiac Hemodynamic Imaging and RNA Sequencing Reveal Corresponding Heterogeneity of Ventricular Wall Shear Stress and Endocardial Transcriptome. *Journal of the American Heart Association*, **2016**, 5, e003170	6	11
127	In Vivo Assessment of the Impact of Regional Intracranial Atherosclerotic Lesions on Brain Arterial 3D Hemodynamics. *American Journal of Neuroradiology*, **2017**, 38, 515-522	4.4	10

126	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	2.5	10
125	Congenital heart disease in adults: Quantitative and qualitative evaluation of IR FLASH and IR SSFP MRA techniques using a blood pool contrast agent in the steady state and comparison to first pass MRA. *European Journal of Radiology*, **2015**, 84, 1921-9	4.7	10
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