

# Thierry Blu

## List of Publications by Year in descending order

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159  
papers

9,524  
citations

66234

42  
h-index

51492

86  
g-index

160  
all docs

160  
docs citations

160  
times ranked

6531  
citing authors

#	ARTICLE	IF	CITATIONS
1	Sampling signals with finite rate of innovation. IEEE Transactions on Signal Processing, 2002, 50, 1417-1428.	3.2	847
2	Interpolation revisited [medical images application]. IEEE Transactions on Medical Imaging, 2000, 19, 739-758.	5.4	725
3	Low-bond axisymmetric drop shape analysis for surface tension and contact angle measurements of sessile drops. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2010, 364, 72-81.	2.3	546
4	A New SURE Approach to Image Denoising: Interscale Orthonormal Wavelet Thresholding. IEEE Transactions on Image Processing, 2007, 16, 593-606.	6.0	507
5	Image Denoising in Mixed Poisson-Gaussian Noise. IEEE Transactions on Image Processing, 2011, 20, 696-708.	6.0	354
6	Sparse Sampling of Signal Innovations. IEEE Signal Processing Magazine, 2008, 25, 31-40.	4.6	337
7	Sampling Moments and Reconstructing Signals of Finite Rate of Innovation: Shannon Meets Strang-Fix. IEEE Transactions on Signal Processing, 2007, 55, 1741-1757.	3.2	323
8	Fractional Splines and Wavelets. SIAM Review, 2000, 42, 43-67.	4.2	322
9	The SURE-LET Approach to Image Denoising. IEEE Transactions on Image Processing, 2007, 16, 2778-2786.	6.0	301
10	Monte-Carlo Sure: A Black-Box Optimization of Regularization Parameters for General Denoising Algorithms. IEEE Transactions on Image Processing, 2008, 17, 1540-1554.	6.0	275
11	Linear Interpolation Revitalized. IEEE Transactions on Image Processing, 2004, 13, 710-719.	6.0	262
12	Image Interpolation and Resampling. , 2000, , 393-420.		234
13	Real-time terahertz imaging with a single-pixel detector. Nature Communications, 2020, 11, 2535.	5.8	225
14	Fast interscale wavelet denoising of Poisson-corrupted images. Signal Processing, 2010, 90, 415-427.	2.1	191
15	Cardinal exponential splines: part I - theory and filtering algorithms. IEEE Transactions on Signal Processing, 2005, 53, 1425-1438.	3.2	185
16	Complex-wave retrieval from a single off-axis hologram. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 367.	0.8	177
17	Sampling Piecewise Sinusoidal Signals With Finite Rate of Innovation Methods. IEEE Transactions on Signal Processing, 2010, 58, 613-625.	3.2	176
18	Efficient Energies and Algorithms for Parametric Snakes. IEEE Transactions on Image Processing, 2004, 13, 1231-1244.	6.0	164

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19	Generalized Daubechies Wavelet Families. IEEE Transactions on Signal Processing, 2007, 55, 4415-4429.	3.2	159
20	MOMS: maximal-order interpolation of minimal support. IEEE Transactions on Image Processing, 2001, 10, 1069-1080.	6.0	158
21	Quantitative Fourier analysis of approximation techniques. I. Interpolators and projectors. IEEE Transactions on Signal Processing, 1999, 47, 2783-2795.	3.2	149
22	Fresnelets: new multiresolution wavelet bases for digital holography. IEEE Transactions on Image Processing, 2003, 12, 29-43.	6.0	146
23	Wavelet theory demystified. IEEE Transactions on Signal Processing, 2003, 51, 470-483.	3.2	145
24	FRI Sampling With Arbitrary Kernels. IEEE Transactions on Signal Processing, 2013, 61, 5310-5323.	3.2	133
25	Mathematical properties of the jpeg2000 wavelet filters. IEEE Transactions on Image Processing, 2003, 12, 1080-1090.	6.0	132
26	SURE-LET Multichannel Image Denoising: Interscale Orthonormal Wavelet Thresholding. IEEE Transactions on Image Processing, 2008, 17, 482-492.	6.0	119
27	Sampling Curves With Finite Rate of Innovation. IEEE Transactions on Signal Processing, 2014, 62, 458-471.	3.2	113
28	Isotropic polyharmonic B-splines: scaling functions and wavelets. IEEE Transactions on Image Processing, 2005, 14, 1798-1813.	6.0	95
29	Least-squares image resizing using finite differences. IEEE Transactions on Image Processing, 2001, 10, 1365-1378.	6.0	93
30	Approximation Error for Quasi-Interpolators and (Multi-)Wavelet Expansions. Applied and Computational Harmonic Analysis, 1999, 6, 219-251.	1.1	90
31	Hex-Splines: A Novel Spline Family for Hexagonal Lattices. IEEE Transactions on Image Processing, 2004, 13, 758-772.	6.0	69
32	Integrated wavelet processing and spatial statistical testing of fMRI data. NeuroImage, 2004, 23, 1472-1485.	2.1	67
33	Towards Generalized FRI Sampling With an Application to Source Resolution in Radioastronomy. IEEE Transactions on Signal Processing, 2017, 65, 821-835.	3.2	67
34	Multi-Wiener SURE-LET Deconvolution. IEEE Transactions on Image Processing, 2013, 22, 1954-1968.	6.0	64
35	MR-based respiratory and cardiac motion correction for PET imaging. Medical Image Analysis, 2017, 42, 129-144.	7.0	64
36	SURE-LET for Orthonormal Wavelet-Domain Video Denoising. IEEE Transactions on Circuits and Systems for Video Technology, 2010, 20, 913-919.	5.6	62

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37	A new design algorithm for two-band orthonormal rational filter banks and orthonormal rational wavelets. IEEE Transactions on Signal Processing, 1998, 46, 1494-1504.	3.2	55
38	Generalized smoothing splines and the optimal discretization of the Wiener filter. IEEE Transactions on Signal Processing, 2005, 53, 2146-2159.	3.2	53
39	Wavelets, fractals, and radial basis functions. IEEE Transactions on Signal Processing, 2002, 50, 543-553.	3.2	50
40	Iterated filter banks with rational rate changes connection with discrete wavelet transforms. IEEE Transactions on Signal Processing, 1993, 41, 3232-3244.	3.2	47
41	Generalized sampling: a variational approach .I. Theory. IEEE Transactions on Signal Processing, 2002, 50, 1965-1976.	3.2	47
42	Terahertz pulsed imaging in vivo: measurements and processing methods. Journal of Biomedical Optics, 2011, 16, 106010.	1.4	47
43	Robust real-time segmentation of images and videos using a smooth-spline snake-based algorithm. IEEE Transactions on Image Processing, 2005, 14, 910-924.	6.0	46
44	PURE-LET Image Deconvolution. IEEE Transactions on Image Processing, 2018, 27, 92-105.	6.0	46
45	Self-Similarity: Part I – Splines and Operators. IEEE Transactions on Signal Processing, 2007, 55, 1352-1363.	3.2	42
46	WSPM: Wavelet-based statistical parametric mapping. NeuroImage, 2007, 37, 1205-1217.	2.1	37
47	Self-Similarity: Part II – Optimal Estimation of Fractal Processes. IEEE Transactions on Signal Processing, 2007, 55, 1364-1378.	3.2	37
48	A CURE for Noisy Magnetic Resonance Images: Chi-Square Unbiased Risk Estimation. IEEE Transactions on Image Processing, 2012, 21, 3454-3466.	6.0	35
49	Complex B-splines. Applied and Computational Harmonic Analysis, 2006, 20, 261-282.	1.1	31
50	Wavelet-based multi-resolution statistics for optical imaging signals: Application to automated detection of odour activated glomeruli in the mouse olfactory bulb. NeuroImage, 2007, 34, 1020-1035.	2.1	31
51	Surfing the brain. IEEE Engineering in Medicine and Biology Magazine, 2006, 25, 65-78.	1.1	30
52	Nonideal Sampling and Regularization Theory. IEEE Transactions on Signal Processing, 2008, 56, 1055-1070.	3.2	30
53	Complete parameterization of piecewise-polynomial interpolation kernels. IEEE Transactions on Image Processing, 2003, 12, 1297-1309.	6.0	29
54	Sampling and exact reconstruction of bandlimited signals with additive shot noise. IEEE Transactions on Information Theory, 2006, 52, 2230-2233.	1.5	29

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55	Sampling of periodic signals: a quantitative error analysis. IEEE Transactions on Signal Processing, 2002, 50, 1153-1159.	3.2	28
56	An exact method for computing the area moments of wavelet and spline curves. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2001, 23, 633-642.	9.7	27
57	Multiframe sure-let denoising of timelapse fluorescence microscopy images. , 2008, , .		25
58	Generalized sampling: a variational approach .II. Applications. IEEE Transactions on Signal Processing, 2002, 50, 1977-1985.	3.2	24
59	On the multidimensional extension of the quincunx subsampling matrix. IEEE Signal Processing Letters, 2005, 12, 112-115.	2.1	24
60	Reconstruction of Finite Rate of Innovation Signals with Model-Fitting Approach. IEEE Transactions on Signal Processing, 2015, 63, 6024-6036.	3.2	23
61	An Iterative Linear Expansion of Thresholds for $\ell_1$ -Based Image Restoration. IEEE Transactions on Image Processing, 2013, 22, 3715-3728.	6.0	22
62	Single Antenna Power Measurements Based Direction Finding. IEEE Transactions on Signal Processing, 2010, 58, 5682-5692.	3.2	20
63	LAPNet: Non-Rigid Registration Derived in $k$ -Space for Magnetic Resonance Imaging. IEEE Transactions on Medical Imaging, 2021, 40, 3686-3697.	5.4	19
64	Local All-Pass Geometric Deformations. IEEE Transactions on Image Processing, 2018, 27, 1010-1025.	6.0	18
65	Fast Haar-wavelet denoising of multidimensional fluorescence microscopy data. , 2009, , .		17
66	Discretization of continuous convolution operators for accurate modeling of wave propagation in digital holography. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 12.	0.8	17
67	Exact Sampling Results for Signals with Finite Rate of Innovation using Strang-Fix Conditions and Local Kernels. , 0, , .		16
68	Shift-invariant spaces from rotation-covariant functions. Applied and Computational Harmonic Analysis, 2008, 25, 240-265.	1.1	16
69	Analytic Sensing: Noniterative Retrieval of Point Sources from Boundary Measurements. SIAM Journal of Scientific Computing, 2009, 31, 3179-3194.	1.3	16
70	Fitting instead of annihilation: Improved recovery of noisy FRI signals. , 2014, , .		16
71	Local All-Pass filters for optical flow estimation. , 2015, , .		16
72	A bulk modulus dependent linear model for acoustical imaging. Journal of the Acoustical Society of America, 2009, 125, 2413-2419.	0.5	15

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73	<title>Unifying approach and interface for spline-based snakes</title>. , 2001, , .		14
74	3-D shape estimation of DNA molecules from stereo cryo-electron micro-graphs using a projection-steerable snake. IEEE Transactions on Image Processing, 2006, 15, 214-227.	6.0	14
75	On-the-fly estimation of a microscopy point spread function. Optics Express, 2018, 26, 26120.	1.7	14
76	<title>Construction of fractional spline wavelet bases</title>. , 1999, , .		13
77	Non-linear Fresnelet approximation for interference term suppression in digital holography. , 2003, , .		13
78	FRI Sensing: Retrieving the Trajectory of a Mobile Sensor From Its Temporal Samples. IEEE Transactions on Signal Processing, 2020, 68, 5533-5545.	3.2	13
79	Image Interpolation and Resampling. , 2009, , 465-493.		12
80	LEAP: Looking beyond pixels with continuous-space EstimAtion of Point sources. Astronomy and Astrophysics, 2017, 608, A136.	2.1	11
81	Generalized L-spline wavelet bases. , 2005, , .		10
82	Finding the minimum rate of innovation in the presence of noise. , 2016, , .		10
83	Generic FRI-Based DOA Estimation: A Model-Fitting Method. IEEE Transactions on Signal Processing, 2021, 69, 4102-4115.	3.2	10
84	3D motion flow estimation using local all-pass filters. , 2016, , .		9
85	All-Pass Parametric Image Registration. IEEE Transactions on Image Processing, 2020, 29, 5625-5640.	6.0	8
86	Blind optimization of algorithm parameters for signal denoising by Monte-Carlo SURE. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	7
87	Analytical Footprints: Compact Representation of Elementary Singularities in Wavelet Bases. IEEE Transactions on Signal Processing, 2010, 58, 6105-6118.	3.2	7
88	SURE-MSE speech enhancement for robust speech recognition. , 2010, , .		7
89	Sure-based blind Gaussian deconvolution. , 2012, , .		7
90	FRI Sensing: Sampling Images along Unknown Curves. , 2019, , .		7

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91	The Fourier-Argand Representation: An Optimal Basis of Steerable Patterns. IEEE Transactions on Image Processing, 2020, , 1-1.	6.0	7
92	<title>Statistical analysis of fMRI data using orthogonal filterbanks</title>. , 1999, , .		6
93	<title>Variational approach to tomographic reconstruction</title>. , 2001, 4322, 30.		6
94	Wavelets versus resels in the context of fMRI: establishing the link with SPM. , 2003, , .		6
95	Pure-let deconvolution of 3D fluorescence microscopy images. , 2017, , .		6
96	Probing chemical exchange using quantitative spinâ€œlock $R_{1\rho}$ asymmetry imaging with adiabatic RF pulses. Magnetic Resonance in Medicine, 2019, 82, 1767-1781.	1.9	6
97	Quantitative $T1\rho$ -MRI of the Head and Neck Discriminates Carcinoma and Benign Hyperplasia in the Nasopharynx. American Journal of Neuroradiology, 2020, 41, 2339-2344.	1.2	6
98	Multiwavelet-like bases for high-quality image interpolation. , 2003, 5207, 153.		5
99	Sure-Based Wavelet Thresholding Integrating Inter-Scale Dependencies. , 2006, , .		5
100	Undecimated haar thresholding for poisson intensity estimation. , 2010, , .		5
101	Localization of point sources for systems governed by the wave equation. , 2011, , .		5
102	Deconvolution of poissonian images with the PURE-LET approach. , 2016, , .		5
103	FRI sampling and time-varying pulses: Some theory and four short stories. , 2017, , .		5
104	Efficient Multidimensional Diracs Estimation With Linear Sample Complexity. IEEE Transactions on Signal Processing, 2018, 66, 4642-4656.	3.2	5
105	Lap-Based Video Frame Interpolation. , 2019, , .		5
106	$p$ -multiresolution analysis: how to reduce ringing and sparsify the error. IEEE Transactions on Image Processing, 2002, 11, 656-669.	6.0	4
107	Local amplitude and phase retrieval method for digital holography applied to microscopy. , 2003, 5143, 210.		4
108	A new family of complex rotation-covariant multiresolution bases in 2D. , 2003, , .		4

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109	Compression of ECG as a Signal with Finite Rate of Innovation. , 2005, 2005, 7564-7.		4
110	NON-ITERATIVE EXACT SIGNAL RECOVERY IN FREQUENCY DOMAIN OPTICAL COHERENCE TOMOGRAPHY. , 2007, , .		4
111	Image Denoising by Pointwise Thresholding of the Undecimated Wavelet Coefficients: A Global Sure Optimum. , 2007, , .		4
112	SURE-LET image deconvolution using multiple Wiener filters. , 2012, , .		4
113	Approximationorder of the lap optical flow algorithm. , 2015, , .		4
114	Exploring the Geometry of One-Dimensional Signals. IEEE Transactions on Signal Processing, 2021, 69, 5299-5312.	3.2	4
115	<title>Fresnelets: a new wavelet basis for digital holography</title>. , 2001, , .		3
116	Generalized Daubechies Wavelets. , 0, , .		3
117	Generalized YUV interpolation of CFA images. , 2010, , .		3
118	Generalized interpolation for motion compensated prediction. , 2011, , .		3
119	Sparse image restoration using iterated linear expansion of thresholds. , 2011, , .		3
120	A multi-frame optical flow spot tracker. , 2015, , .		3
121	Image denoising in multiplicative noise. , 2015, , .		3
122	Optimizing wavelets for the analysis of fMRI data. , 2000, , .		2
123	Wavelets and radial basis functions: a unifying perspective. , 2000, 4119, 487.		2
124	A New Technique for High-Resolution Frequency Domain Optical Coherence Tomography. , 2007, , .		2
125	Construction of wavelet bases that mimic the behaviour of some given operator. , 2007, , .		2
126	Fast Computation of Polyharmonic B-Spline Autocorrelation Filters. IEEE Signal Processing Letters, 2008, 15, 773-776.	2.1	2



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127	Azimuth-elevation direction finding using power measurements from single antenna. , 2011, , .		2
128	A new non-redundant complex Hilbert wavelet transforms. , 2012, , .		2
129	Single antenna power measurements based direction finding with incomplete spatial coverage. , 2012, , .		2
130	Analytic sensing for multi-layer spherical models with application to EEG source imaging. Inverse Problems and Imaging, 2013, 7, 1251-1270.	0.6	2
131	Gaussian blur estimation for photon-limited images. , 2017, , .		2
132	An Iterative Sure-Let Deconvolution Algorithm Based on BM3D Denoiser. , 2019, , .		2
133	D-SLAM: Diffusion Source Localization and Trajectory Mapping. , 2020, , .		2
134	Finite-Rate-of-Innovation for the Inverse Source Problem of Radiating Fields. Sampling Theory in Signal and Information Processing, 2014, 13, 271-294.	0.2	2
135	Non-Euclidean pyramids. , 2000, 4119, 710.		1
136	Fractional wavelets, derivatives, and Besov spaces. , 2003, , .		1
137	Harmonic spline series representation of scaling functions. , 2003, , .		1
138	Semi-orthogonal wavelets that behave like fractional differentiators. , 2005, , .		1
139	SURE-LET multichannel image denoising: undecimated wavelet thresholding. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	1
140	An unbiased risk estimator for multiplicative noise &#x2014; Application to 1-D signal denoising. , 2014, , .		1
141	Time-Varying Delay Estimation Using Common Local All-Pass Filters with Application to Surface Electromyography. , 2018, , .		1
142	Accurate 3D PSF estimation from a wide-field microscopy image. , 2018, , .		1
143	Total Internal Reflection THz Devices for High Speed Imaging. , 2018, , .		1
144	Detecting Curves in Very Noisy Images Using Fourier-Argand Moments. , 2019, , .		1

#	ARTICLE	IF	CITATIONS
145	Parametric Registration for Mobile Phone Images. , 2019, , .		1
146	On The Degrees Of Freedom in Total Variation Minimization. , 2020, , .		1
147	Diffusion SLAM: Localising diffusion sources from samples taken by location-unaware mobile sensors. IEEE Transactions on Signal Processing, 2021, , 1-1.	3.2	1
148	A Nonlinear Steerable Complex Wavelet Decomposition of Images. , 2022, , .		1
149	<title>Comparison of wavelets from the point of view of their approximation error</title>. , 1998, , .		0
150	<title>Theoretical analysis of the projection error onto discrete wavelet subspaces</title>. , 1999, 3813, 273.		0
151	<title>Why restrict ourselves to compactly supported basis functions?</title>. , 2001, 4478, 311.		0
152	Exact Local Reconstruction Algorithms for Signals with Finite Rate of Innovation. , 2006, , .		0
153	SURE-LET interscale-intercolor wavelet thresholding for color image denoising. Proceedings of SPIE, 2007, , .	0.8	0
154	Short basis functions for constant-variance interpolation. , 2008, , .		0
155	Eigensensing and deconvolution for the reconstruction of heat absorption profiles from photoacoustic tomography data. , 2013, , .		0
156	Annihilation-driven localised image edge models. , 2015, , .		0
157	A Novel Gcv-Based Criterion for Parameter Selection In Image Deconvolution. , 2018, , .		0
158	Towards real-time THz imaging with single-pixel detectors. , 2019, , .		0
159	Localising Diffusion Sources from Samples Taken Along Unknown Parametric Trajectories. , 2021, , .		0