

# Frederic Pascal

## List of Publications by Year in descending order

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117  
papers

1,937  
citations

361045

20  
h-index

276539

41  
g-index

118  
all docs

118  
docs citations

118  
times ranked

892  
citing authors

#	ARTICLE	IF	CITATIONS
1	Covariance Structure Maximum-Likelihood Estimates in Compound Gaussian Noise: Existence and Algorithm Analysis. IEEE Transactions on Signal Processing, 2008, 56, 34-48.	3.2	303
2	Performance Analysis of Covariance Matrix Estimates in Impulsive Noise. IEEE Transactions on Signal Processing, 2008, 56, 2206-2217.	3.2	133
3	Persymmetric Adaptive Radar Detectors. IEEE Transactions on Aerospace and Electronic Systems, 2011, 47, 2376-2390.	2.6	108
4	MIMO Radar Detection in Non-Gaussian and Heterogeneous Clutter. IEEE Journal on Selected Topics in Signal Processing, 2010, 4, 115-126.	7.3	106
5	Parameter Estimation For Multivariate Generalized Gaussian Distributions. IEEE Transactions on Signal Processing, 2013, 61, 5960-5971.	3.2	106
6	A New Multivariate Statistical Model for Change Detection in Images Acquired by Homogeneous and Heterogeneous Sensors. IEEE Transactions on Image Processing, 2015, 24, 799-812.	6.0	95
7	Coherency Matrix Estimation of Heterogeneous Clutter in High-Resolution Polarimetric SAR Images. IEEE Transactions on Geoscience and Remote Sensing, 2010, 48, 1809-1826.	2.7	94
8	Generalized Robust Shrinkage Estimator and Its Application to STAP Detection Problem. IEEE Transactions on Signal Processing, 2014, 62, 5640-5651.	3.2	93
9	Asymptotic Properties of Robust Complex Covariance Matrix Estimates. IEEE Transactions on Signal Processing, 2013, 61, 3348-3356.	3.2	60
10	Statistical Classification for Heterogeneous Polarimetric SAR Images. IEEE Journal on Selected Topics in Signal Processing, 2011, 5, 567-576.	7.3	55
11	Robust Estimates of Covariance Matrices in the Large Dimensional Regime. IEEE Transactions on Information Theory, 2014, 60, 7269-7278.	1.5	51
12	Exact Maximum Likelihood Estimates for SIRV Covariance Matrix: Existence and Algorithm Analysis. IEEE Transactions on Signal Processing, 2008, 56, 4563-4573.	3.2	43
13	The random matrix regime of Maronna's M-estimator with elliptically distributed samples. Journal of Multivariate Analysis, 2015, 139, 56-78.	0.5	40
14	Low-Complexity Algorithms for Low Rank Clutter Parameters Estimation in Radar Systems. IEEE Transactions on Signal Processing, 2016, 64, 1986-1998.	3.2	40
15	Performance of Two Low-Rank STAP Filters in a Heterogeneous Noise. IEEE Transactions on Signal Processing, 2013, 61, 57-61.	3.2	35
16	Hyperspectral Anomaly Detectors Using Robust Estimators. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2016, 9, 720-731.	2.3	26
17	Optimal Design of the Adaptive Normalized Matched Filter Detector Using Regularized Tyler Estimators. IEEE Transactions on Aerospace and Electronic Systems, 2018, 54, 755-769.	2.6	24
18	First- and Second-Order Moments of the Normalized Sample Covariance Matrix of Spherically Invariant Random Vectors. IEEE Signal Processing Letters, 2007, 14, 425-428.	2.1	22

#	ARTICLE	IF	CITATIONS
19	Exploiting persymmetry for low-rank Space Time Adaptive Processing. Signal Processing, 2014, 97, 242-251.	2.1	22
20	Robust Covariance Matrix Estimation in Heterogeneous Low Rank Context. IEEE Transactions on Signal Processing, 2016, 64, 5794-5806.	3.2	21
21	Normalized Coherency Matrix Estimation Under the SIRV Model. Alpine Glacier Polsar Data Analysis. , 2008, , .		20
22	Change detection for optical and radar images using a Bayesian nonparametric model coupled with a Markov random field. , 2015, , .		20
23	Shrinking the eigenvalues of M-estimators of covariance matrix. IEEE Transactions on Signal Processing, 2020, , 1-1.	3.2	20
24	Second order statistics of robust estimators of scatter. Application to GLRT detection for elliptical signals. Journal of Multivariate Analysis, 2016, 143, 249-274.	0.5	19
25	Clutter Subspace Estimation in Low Rank Heterogeneous Noise Context. IEEE Transactions on Signal Processing, 2015, 63, 2173-2182.	3.2	18
26	Adaptive Nonzero-Mean Gaussian Detection. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1117-1124.	2.7	17
27	On the Use of Matrix Information Geometry for Polarimetric SAR Image Classification. , 2013, , 257-276.		15
28	Optimal Parameter Estimation in Heterogeneous Clutter for High-Resolution Polarimetric SAR Data. IEEE Geoscience and Remote Sensing Letters, 2011, 8, 1046-1050.	1.4	13
29	Spatio-temporal adaptive detector in non-homogeneous and low-rank clutter. , 2009, , .		12
30	New Insights Into the Statistical Properties of $\hat{M}$ -Estimators. IEEE Transactions on Signal Processing, 2018, 66, 4253-4263.	3.2	12
31	Robust anomaly detection in Hyperspectral Imaging. , 2014, , .		11
32	A Bayesian Nonparametric Model Coupled with a Markov Random Field for Change Detection in Heterogeneous Remote Sensing Images. SIAM Journal on Imaging Sciences, 2016, 9, 1889-1921.	1.3	11
33	Adaptive MIMO radar detection in non-Gaussian and heterogeneous clutter considering fluctuating targets. , 2009, , .		10
34	Derivation of the Bias of the Normalized Sample Covariance Matrix in a Heterogeneous Noise With Application to Low Rank STAP Filter. IEEE Transactions on Signal Processing, 2012, 60, 514-518.	3.2	9
35	Theoretical Analysis of an Improved Covariance Matrix Estimator in non-Gaussian Noise. , 0, , .		8
36	On Persymmetric Covariance Matrices in Adaptive Detection. , 2008, , .		8

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37	Performance of the maximum likelihood estimators for the parameters of multivariate generalized Gaussian distributions. , 2012, , .		8
38	Hierarchical segmentation of Polarimetric SAR images using heterogeneous clutter models. , 2009, , .		7
39	A class of robust estimates for detection in hyperspectral images using elliptical distributions background. , 2012, , .		7
40	Low-rank filter and detector for multidimensional data based on an alternative unfolding HOSVD: application to polarimetric STAP. Eurasip Journal on Advances in Signal Processing, 2014, 2014, .	1.0	7
41	RMT for whitening space correlation and applications to radar detection. , 2015, , .		7
42	A bias-compensated MUSIC for small number of samples. Signal Processing, 2017, 138, 117-120.	2.1	7
43	Robust ANMF Detection in Noncentered Impulsive Background. IEEE Signal Processing Letters, 2017, 24, 1891-1895.	2.1	7
44	Deep robust regression. , 2017, , .		7
45	New model order selection in large dimension regime for complex elliptically symmetric noise. , 2017, , .		7
46	Robust detection using the SIRV background modelling for hyperspectral imaging. , 2011, , .		6
47	False-alarm regulation for target detection in hyperspectral imaging. , 2013, , .		6
48	Binary partition trees-based robust adaptive hyperspectral RX anomaly detection. , 2014, , .		6
49	New Low-Rank Filters for MIMO-STAP Based on an Orthogonal Tensorial Decomposition. IEEE Transactions on Aerospace and Electronic Systems, 2018, 54, 1208-1220.	2.6	6
50	On the Asymptotics of Maronna's Robust PCA. IEEE Transactions on Signal Processing, 2019, 67, 4964-4975.	3.2	6
51	\$M\$ -NL: Robust NL-Means Approach for PolSAR Images Denoising. IEEE Geoscience and Remote Sensing Letters, 2019, 16, 997-1001.	1.4	6
52	Statistical analysis of the covariance matrix MLE in K-distributed clutter. Signal Processing, 2010, 90, 1165-1175.	2.1	5
53	On the extension of the product model in POLSAR processing for unsupervised classification using information geometry of covariance matrices. , 2011, , .		5
54	Asymptotic properties of the robust ANMF. , 2015, , .		5

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55	Performance of the Low-Rank Adaptive Normalized Matched Filter Test Under a Large Dimension Regime. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 459-468.	2.6	5
56	A Riemannian Framework for Low-Rank Structured Elliptical Models. IEEE Transactions on Signal Processing, 2021, 69, 1185-1199.	3.2	5
57	Stable Scatterers detection and tracking in heterogeneous clutter by repeat-pass SAR interferometry. , 2010, , .		4
58	Robust estimation of the clutter subspace for a Low Rank heterogeneous noise under high Clutter to Noise Ratio assumption. , 2014, , .		4
59	Asymptotic performance of the Low Rank Adaptive Normalized Matched Filter in a large dimensional regime. , 2015, , .		4
60	Anomaly detection and estimation in hyperspectral imaging using Random Matrix Theory tools. , 2015, , .		4
61	A robust signal subspace estimator. , 2016, , .		4
62	Convergence and Fluctuations of Regularized Tyler Estimators. IEEE Transactions on Signal Processing, 2016, 64, 1048-1060.	3.2	4
63	A SIRV-CFAR adaptive detector exploiting persymmetric clutter covariance structure. , 2008, , .		3
64	On the use of Empirical Likelihood for non-Gaussian clutter covariance matrix estimation. , 2008, , .		3
65	The Empirical Likelihood method applied to covariance matrix estimation. Signal Processing, 2010, 90, 566-578.	2.1	3
66	Robust MIMO radar detection for correlated subarrays. , 2010, , .		3
67	Roll invariant target detection based on PolSAR clutter models. , 2010, , .		3
68	Robust covariance matrix estimates with attractive asymptotic properties. , 2011, , .		3
69	Robust detection using M-estimators for hyperspectral imaging. , 2012, , .		3
70	A joint robust estimation and random matrix framework with application to array processing. , 2013, , .		3
71	Shrinkage covariance matrix estimator applied to STAP detection. , 2014, , .		3
72	Asymptotic detection performance analysis of the robust Adaptive Normalized Matched Filter. , 2015, , .		3

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73	Optimal adaptive normalized matched filter for large antenna arrays. , 2016, , .		3
74	A Toeplitz-Tyler Estimation of the Model Order in Large Dimensional Regime. , 2018, , .		3
75	Theoretical Performance of Low Rank Adaptive Filters in the Large Dimensional Regime. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 3347-3364.	2.6	3
76	Robust Semiparametric Efficient Estimators in Complex Elliptically Symmetric Distributions. IEEE Transactions on Signal Processing, 2020, 68, 5003-5015.	3.2	3
77	Estimation and segmentation in non-Gaussian POLSAR clutter by SIRV stochastic processes. , 2009, , .		2
78	On the resolvability of closely spaced targets using a colocated MIMO radar. , 2012, , .		2
79	Performances of low rank detectors based on random matrix theory with application to STAP. , 2014, , .		2
80	CFAR property and robustness of the lowrank adaptive normalized matched filters detectors in low rank compound gaussian context. , 2014, , .		2
81	On the Convergence of Maronna's $M$ -Estimators of Scatter. IEEE Signal Processing Letters, 2015, 22, 709-712.	2.1	2
82	Improving Portfolios Global Performance with Robust Covariance Matrix Estimation: Application to the Maximum Variety Portfolio. , 2018, , .		2
83	An Improved Low Rank Detector in the High Dimensional Regime. , 2019, , .		2
84	Spectral Shrinkage of Tyler's $M$ -Estimator of Covariance Matrix. , 2019, , .		2
85	On the performance of robust plug-in detectors using M-estimators. Signal Processing, 2020, 167, 107282.	2.1	2
86	Riemannian Framework for Robust Covariance Matrix Estimation in Spiked Models. , 2020, , .		2
87	Improving portfolios global performance using a cleaned and robust covariance matrix estimate. Soft Computing, 2020, 24, 8643-8654.	2.1	2
88	Robust clustering and outlier rejection using the Mahalanobis distance distribution. , 2021, , .		2
89	Joint Estimation of Location and Scatter in Complex Elliptically Symmetric Distributions. Journal of Signal Processing Systems, 2022, 94, 133-146.	1.4	2
90	STAP à rang réduit, robuste et persymétrique. Traitement Du Signal, 2011, 28, 143-170.	0.8	2

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91	Robust Semiparametric DOA Estimation in non-Gaussian Environment. , 2020, , .		2
92	A test statistic for high resolution polarimetric SAR data classification. , 2010, , .		1
93	Heterogeneous clutter model for high resolution polarimetric SAR data processing. , 2011, , .		1
94	Robust ANMF test using Huber's M-estimator. , 2012, , .		1
95	Multidimensional low-rank filter based on the AU-HOSVD for MIMO STAP. , 2013, , .		1
96	Performance analysis of robust detectors for hyperspectral imaging. , 2013, , .		1
97	A multivariate statistical model for multiple images acquired by homogeneous or heterogeneous sensors. , 2014, , .		1
98	Robust M-estimator of scatter for large elliptical samples. , 2014, , .		1
99	Asymptotic detection performance of the robust ANMF. , 2015, , .		1
100	Fusing Eigenvalues. , 2019, , .		1
101	A new clustering algorithm for PolSAR images segmentation. , 2019, , .		1
102	M-Estimators of Scatter with Eigenvalue Shrinkage. , 2020, , .		1
103	Robust Semiparametric Joint Estimators of Location and Scatter in Elliptical Distributions. , 2020, , .		1
104	Traitement STAP et modélisation SIRV : robustesse et persymétrie. Traitement Du Signal, 2011, 28, 113-142. 0.8		1
105	Théorie des matrices aléatoires robustes et applications à la détection rad. Traitement Du Signal, 2016, 33, 321-349. 0.8		1
106	Optimal parameter estimation in heterogeneous clutter for high resolution polarimetric SAR data. , 2010, , .		0
107	Estimation performance of coherent MIMO-STAP using Cramér-Rao bounds. , 2011, , .		0
108	Low Rank Tensor STAP filter based on multilinear SVD. , 2012, , .		0

#	ARTICLE	IF	CITATIONS
109	CFAR hierarchical clustering of polarimetric SAR data. , 2013, , .		0
110	Numerical performances of low rank stap based on different heterogeneous clutter subspace estimators. , 2014, , .		0
111	Second order statistics of bilinear forms of robust scatter estimators. , 2015, , .		0
112	New properties for Tyler's covariance matrix estimator. , 2016, , .		0
113	New asymptotic properties for the robust ANMF. , 2017, , .		0
114	Performance Analysis of a Low-Rank Detector Under Training Data Contamination. , 2019, , .		0
115	MIMO filters based on robust rank-constrained Kronecker covariance matrix estimation. Signal Processing, 2021, 187, 108116.	2.1	0
116	A Comparative Study of Statistical-Based Change Detection Methods for Multidimensional and Multitemporal SAR Images. Lecture Notes in Mechanical Engineering, 2021, , 189-206.	0.3	0
117	A Convex Formulation for the Robust Estimation of Multivariate Exponential Power Models. , 2022, , .		0