

Curriculum vitae — Professor Dr. Mats I. Pettersson

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Year and place of Birth: 1966, Karlskrona, Sweden

ORCID: <http://orcid.org/0000-0002-6643-312X>

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1. Doctoral degree

Degree: ***Ph.D.***
Subject Area: Signal Processing
University: Chalmers University of Technology, Gothenburg, Sweden
Year: 2000
Title: Contribution to Wideband SAR Space-Time Processing and Radar Remote Sensing of Sea Ice

Degree: ***Licentiate of Engineering***
Subject Area: Radio and Space Science
University: Chalmers University of Technology, Gothenburg, Sweden
Year: 1995
Title: Microwave Remote Sensing of Arctic Sea Ice during Freeze-up using Radar and Passive Radiometry

2. Higher education degree

Degree: ***M.Sc. Engineering Physics***
University: Chalmers University of Technology, Gothenburg, Sweden
Year: 1993

3. Present position

Title: ***Full Professor (2011-)***
Year: 2005-
Placement: Department of Mathematics and Natural Science, Blekinge Institute of Technology, Karlskrona, Sweden

4. Academic and project responsibilities

- 2022- *Vice-chair* at Faculty of Professors, Blekinge Institute of Technology
2021- *Head of subject*, Systems Engineering, Blekinge Institute of Technology
2021- *Chair* at section F in Swedish National Committee for Radio Science (URSI Commission F)
2022 *Visiting Professor* at Aeronautics Institute of Technology CAPES/PRINT
2019- *National pedagogic evaluator* of teachers' pedagogic portfolio
2012- *Research director* for RSG group
- 2019- *Project leader* at BTH for the external project "Radio Occultation Accuracy for Climate, Meteorology, and Space Weather," Swedish National Space Agency
2020- *Project leader* for the external project "Multistatic high-resolution sensing at THz," ELLIIT

5. Previous positions (selected)

Blekinge Institute of Technology (BTH)

- 2016-2018 *Member* of the Board of Governors (3 years)
2011-2013 *Member* of education board (3 years)
2011-2014 *Vice chairman* of academic appointments board (3 years)
2010-2011 *Research director* at School of Engineering (2 years)
2015-2019 *Special Visiting Researcher - PVE* at Instituto Tecnológico de Aeronáutica (ITA) Brazil
- 2019-2020 *Project leader* Tidsserie analys av SAR Data, Swedish Defence Research Institute
2016-2019 *Project leader* at BTH for the research project "Tentacle," European Union
2015-2019 *Project leader* at BTH for the research project "Radio Occultation Inversion Methods," Swedish National Space Agency
2015-2018 *Project leader* for the research project "Novel image inversion algorithms based on Doppler measurement for security and climate monitoring," The Knowledge Foundation (KKS)
2010-2014 *Project leader* for the research project "Next generation of synthetic aperture radar processing techniques to explore the Earth and Universe," The Knowledge Foundation (KKS)
2006-2010 *Project leader* for various external research projects

Swedish Defence Research Establishment (FOI)

- 1998-2007 *Researcher and First researcher*
Dept. of Surveillance Radar, Div. of Sensor Technology, Swedish Defence Research Agency Linköping, Sweden
2001-2007 *Project leader* for two FOI projects, Div. of Sensor Technology, Swedish Defence Research Agency Linköping, Sweden

Ericsson

1996-1997 **Patent Project Manager** (*almost two years*), Ericsson Mobile Communication AB, Lund, Sweden

Chalmers University of Technology

1993-1995 **Ph.D. Student**, Radio and Space Science, School of Electrical Engineering, Chalmers University of Technology, Gothenburg, Sweden

6. Active Ph.D. students and individuals who have completed their doctoral degree or postdoctoral period under my supervision

Active Ph.D. students with me as a supervisor:

Name:	Simon Nilsson	Year:	2020
Name:	Muhammad Rameez	Year:	2017
Name:	Thomas Sievert	Year:	2016
Name:	Vinícius Ludwig Barbosa	Year:	2016

Individuals who completed their doctoral degree under my supervision:

Name:	Saleh Javadi	Year:	2021
Name:	Svante Björklund	Year:	2017
Name:	T.K. Sjögren	Year:	2012
Name:	Imran Iqbal	Year:	2012
Name:	Vu Viet	Year:	2011
Name:	Eric Östlin	Year:	2009
Name:	Viktoria Tegborg ¹	Year:	2008

Individuals who had postdoctoral period under my supervision:

Name:	Yevhen Ivanenko	Year:	2020-
Name:	Bruna Gregory Palm	Year:	2021
Name:	Natanael Rodrigues Gomes	Year:	2016-2017
Name:	Vu Viet	Year:	2012-2016
Name:	Renato Machado	Year:	2013-2015

Visiting Ph.D. Students who did one year under my supervision

Name:	Alexandre Campos	Year:	2020
Name:	Bruna Gregory Palm	Year:	2018-2019
Name:	Dimas Irion Alves	Year:	2018-2019

7. Short Biography

Mats Pettersson has worked for more than 25 years in the field of radar systems research at BTH, FOI, and Chalmers. For all years, his research has been oriented to new radar signal processing algorithms for future radar surveillance and remote sensing systems. He has developed new Synthetic Aperture Radar (SAR) algorithms and done significant work for monostatic, bistatic, multi-static radar, and circular SAR systems. For these systems, he has also achieved algorithms for detecting and estimating various types of targets, focusing on moving objects, and change detection between images. Therefore, a combination of SAR processing and array signal processing has been an essential part of the research. The developed algorithms do not only consider the standard narrow-band radar systems but are mainly designed for future UWB band systems that give resolutions below the operating wavelength. He also has experience in modeling

¹ Licentiate degree

electromagnetic scattering and radio communication. In recent years, he has started research into Radio Occultation, automotive radar, and optical images for traffic and transport. For Radio Occultation, the focus has been algorithm development to handle Earth and Ionosphere reflections, and in automotive radar, it has been to address the increasing problem of interference. The optical image analysis research has increased his interest in AI and machine learning algorithms, which has also spanned radar research.

8. Experience in industrial and international research collaboration

Mats have, during the years at FOI and BTH, been an active project leader. At the moment, he is the project leader of two external projects. He has been the main project leader/applicant for 15 research projects with approximately *90 million SEK* in external funding. Almost all those projects have been in close collaboration with the industry. Therefore, Mats has a long experience in national and international research collaboration. The main national collaborators are Beyond Gravity, Saab, Safe Radar, Swedish Transport Administration, Swedish Transport Agency, and FOI. Internationally he is collaborating with *ITA*, Brazil, *University of Duisburg*, Germany *Airbus Defence and Space*, Germany, *Alberta University*, Canada, and “Forschungszentrum der Bundesrepublik Deutschland für Luft- und Raumfahrt” (*DLR*), Germany. In the past, his research groups has been collaborating with e.g. *NASA*, USA, *DERA*, UK, *Air Force Research Laboratory (AFRL)*, USA, *DARPA*, USA, *Office National d'Études et de Recherches Aéronautiques(ONERA)*, France, *ESA*, European

Publication list Professor Mats I. Pettersson

1. Peer-reviewed articles

J.G. Vinholi, B.G. Palm, D. Silva, R. Machado, M.I. Pettersson, "Change Detection Based on Convolutional Neural Networks Using Stacks of Wavelength-Resolution Synthetic Aperture Radar Images", **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 60, 2022

T.K. Sjögren, V.T. Vu, Mats I. Pettersson, A. Gustavsson, "Change Detection for Monostatic Pursuit SAR GMTI - Theories and Experimental Results", **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 60, 2022

V.T Vu, M.I. Pettersson, "Tilt phenomenon in bistatic SAR image", **IEEE Geoscience and Remote Sensing Letter**, Vol. 19, 2022

M. Rameez, M.I. Pettersson, M. Dahl, "Interference Compression and Mitigation for Automotive FMCW Radar Systems", **IEEE Sensor Journal**, Vol. 22, Issue 20, 2022

V.T. Vu, M.I. Pettersson, A. Batra, T. Kaiser, "Fourier Transform of SAR Data Cube and 3D Range Migration Algorithm", **IEEE Transactions on Aerospace and Electronic Systems**, Vol. 58, Issue 3, 2022

Y. Ivanenko, V. T. Vu, A. Batra, T. Kaiser, and M. I. Pettersson, "Interpolation Methods with Phase Control for Backprojection of Complex-Valued SAR Data," **Sensors**, vol. 22, no. 13, 2022

B.G. Palm, F.M. Bayer, R. Machado, M.I. Pettersson, V.T Vu, R.J. Cintra, "Robust Rayleigh Regression Method for SAR Image Processing in Presence of Outliers", **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 60, 2022

V.T Vu, M.I. Pettersson, "Sidelobe Control for Bistatic SAR Imaging", **IEEE Geoscience and Remote Sensing Letter**, Vol. 19, 2022

D.I. Alves, C. Müller, B.G. Palm, M.I. Pettersson, V.T. Vu, R. Machado, B.F. Uchôa-Filho, P. Dammert, and H. Hellsten, "Neyman-Pearson Criterion-Based Change Detection Methods for Wavelength-Resolution SAR Image Stacks", **IEEE Geoscience and Remote Sensing Letter**, Vol. 19, 2022

G.F. Araujo, R. Machado, M.I. Pettersson, "Non-cooperative SAR Automatic Target Recognition Based on Scattering Centers Models", **Sensors**, 2022

A.B. Campos, V.T. Vu, M.I. Pettersson, R. Machado, "False Alarm Reduction in Wavelength-Resolution SAR Change Detection Schemes by Using a Convolutional Neural Network", **IEEE Geoscience and Remote Sensing Letter**, Vol. 19, 2022

J.G. Vinholi, D. Silva, R. Machado, M.I. Pettersson, "CNN-Based Change Detection Algorithm for Wavelength-Resolution SAR Images", **IEEE Geoscience and Remote Sensing Letter**, Vol. 19, 2022

V.T. Vu, Thomas K. Sjögren, Mats I. Pettersson, "New Forms of Likelihood Ratio Test for SAR Change Detection", **IEEE Access**, Vol. 9, 2021, pp. 127906-127916

V.L. Barbosa, T. Sievert, A. Carlström, M.I. Pettersson, V.Vu, J. Rasch, "Supervised Detection of Ionospheric Scintillation in Low-Latitude Radio Occultation Measurements", **Remote Sensing**, Vol 13, Issue 9, 2021

V.T Vu, M.I. Pettersson, B.G. Palm, D.I. Alves, N.R. Gomes, "Changing flight heading during pass to enhance SAR change detection performance", **IET Radar Sonar Navigation**, pp. 1-10, 2021

S. Javadi, M. Dahl, M.I. Pettersson, "Vehicle Detection in Aerial Images Based on 3D Depth Maps and Deep Neural Networks", **IEEE Access**, Vol. 9, 2021, pp. 8381-8391

M. Rameez, M. Dahl, M.I. Pettersson, "Autoregressive Model-Based Signal Reconstruction for Automotive Radar Interference Mitigation", **IEEE Sensor Journal**, Vol. 21, Issue 5, 2021

L.P. Ramos, A.B. Campos, C. Schwartz, L.T. Duarte, D.I. Alves, M.I. Pettersson, V.T. Vu, R. Machado, "A Wavelength-Resolution SAR Change Detection Method Based on Image Stack through Robust Principal Component Analysis", **Remote Sensing**, Vol 13, Issue 5, 2021

T. Sievert, J. Rasch, A. Carlström, V.L. Barbosa, M.I. Pettersson, V.Vu, "Using a Sliding Window Phase Matching Method for Imaging of GNSS Radio Occultation Signals", **Remote Sensing**, Vol 13, Issue 5, 2021

D.I. Alves, B.G. Palm, H. Hellsten, V.T. Vu, M.I. Pettersson, R. Machado, B.F. Uchôa-Filho and P. Dammert, "Wavelength-resolution SAR change detection using Bayes' theorem", **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Vol. 13, 2020, pp. 5560-5568

V.L. Barbosa, J. Rasch, A. Carlström, M. I. Pettersson, V.T. Vu, "GNSS Radio Occultation Simulation Using Multiple Phase Screen Orbit Sampling", **IEEE Geoscience and Remote Sensing Letter**, Vol 17, No. 8, 2020

C. Schwartz, L.P. Ramos, L.T. Duarte, M.S. Pinho, M.I. Pettersson, V.T Vu, R. Machado, "Change Detection in UWB SAR Images Based on Robust Principal Component Analysis", **Remote Sensing**, Vol 12, Issue 12, 2020

B.G. Palm, D.L. Alves, M.I. Pettersson, V.T Vu, R. Machado, R.J. Cintra, F.M. Bayer, P. Dammert, H. Hellsten, "Wavelength-Resolution SAR Ground Scene Prediction Based on Image Stack", **Sensors**, Vol. 20, Issue 7, 2020

S. Javadi, M. Dahl, M.I. Pettersson, "Change Detection in Aerial Images Using Three-Dimensional Feature Maps", **Remote Sensing**, Vol. 12, Issue 9, 2020

V.L. Barbosa, T. Sievert, J. Rasch, A. Carlström, M. I. Pettersson, V.T. Vu, "Evaluation of Ionospheric Scintillation in GNSS Radio Occultation Measurements and Simulations", **Radio Science**, Vol. 55, Issue 8, 2020

D.I. Alves, B. G. Palm, M.I. Pettersson, V.T.Vu, R. Machado, B.F. Uchôa-Filho, P. Dammert, and H. Hellsten “A Statistical Analysis for Wavelength-Resolution SAR Image Stacks”, **IEEE Geoscience and Remote Sensing Letter**, vol 17, Issue 2, 2020, pp. 227-231

B.G. Palm; F.M. Bayer; R.J. Cintra; M.I. Pettersson; R. Machado, “Rayleigh Regression Model for Ground Type Detection in SAR Imagery”, **IEEE Geoscience and Remote Sensing Letter**, vol. 16, Issue 10, 2019

N.R. Gomes, P. Dammert, M.I. Pettersson, V.T. Vu, H. Hellsten, “Comparison of the Rayleigh and K-Distributions for Application in Incoherent Change Detection”, **IEEE Geoscience and Remote Sensing Letter**, Vol 16, Issue 5, pp. 756-760, 2019

S. Javadi, M. Dahl, M.I. Pettersson, ”Vehicle speed measurement model for video-based systems”, **Computers and Electrical Engineering**, Vol 76, pp. 238-248, 2019

V.T Vu, N.R. Gomes, M.I. Pettersson, P. Dammert, H. Hellsten, ”Bivariate Gamma Distribution for Wavelength-resolution SAR Change Detection”, **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 57, Issue 1, 2019

V.T. Vu, M.I. Pettersson, P. Dammert, H. Hellsten “Two-Dimensional Data Conversion for One-Dimensional Adaptive Noise Canceler in Low-Frequency SAR Change Detection”, **IEEE Transactions on Aerospace and Electronic Systems**, Vol. 54, Issue 5, 2018

V.T. Vu, M.I. Pettersson, ”Derivation of Bistatic SAR Resolution Equations Based on Backprojection”, **IEEE Geoscience and Remote Sensing Letter**, Vol. 15, Issue 5, pp. 694-698, 2018

T. Sievert, J. Rasch, A. Carlström and M.I. Pettersson, ”Analysis of reflections in GNSS radio occultation measurements using the phase matching amplitude”, **Atmospheric Measurement Techniques**, <https://doi.org/10.5194/amt-2017-216>, 2018

V.T. Vu, Mats I. Pettersson, Thomas K. Sjögren, “Moving Target Focusing in SAR Image With Known Normalized Relative Speed”, **IEEE Transactions on Aerospace and Electronic Systems**, Vol. 53, No. 2, pp. 854-861, 2017

V.T. Vu, M.I. Pettersson, R. Machado, P. Dammert, H. Hellsten, “False Alarm Reduction in Wavelength-Resolution SAR Change Detection Using Adaptive Noise Canceler”, **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 55, No. 1, pp. 591-599, 2017

R. Machado, V.T. Vu, M.I. Pettersson, P. Dammert, H. Hellsten, “The Stability of UWB Low-Frequency SAR Images”, **IEEE Geoscience and Remote Sensing Letter**, Vol. 13, No. 8, pp. 1114-1118, 2016

S. Björklund, P. Grahn, A. Nelander and M.I. Pettersson, ”Measurement of Rank and Other Properties of Direct and Scattered Signals”, **International Journal of Antennas and Propagation**, Article ID 5483547, Vol. 2016, 2016

V.T. Vu, M.I. Pettersson, “Fast Backprojection Algorithms Based on Subapertures and Local Polar Coordinates for General Bistatic Airborne SAR Systems”, **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 54, No. 5, pp. 2706-2712, 2016

M.I. Pettersson, T.K. Sjögren, V.T. Vu, "Performance of Moving Target Parameter Estimation Using SAR", **IEEE Transactions on Aerospace and Electronics Systems**, Vol. 51, No. 2, 2015

D. Oloumi, M.I. Pettersson, M.I., P. Mousavi, K. Rambabu, "Imaging of Oil-Well Perforations Using UWB Synthetic Aperture Radar", **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 53, No. 8, pp. 4510-4520, 2015

V.T. Vu, M.I. Pettersson, "Nyquist Sampling Requirements for Polar Grids in Bistatic Time-Domain Algorithms", **IEEE Transactions on Signal Processing**, Vol 63 , No. 2, pp. 457-465, 2015

V. T. Vu, T. K. Sjögren, and M. I. Pettersson, "Two-Dimensional Spectrum for BiSAR Derivation Based on Lagrange Inversion Theorem", **IEEE Geoscience and Remote Sensing Letter**, Vol. 11, No. 7, 2014

T. K. Sjögren, V. T. Vu, M. I. Pettersson, F. Wang, A. Gustavsson, D. Murrin and L.M.H. Ulander, "Suppression of Clutter in Multichannel SAR GMTI" **IEEE Transactions on Geoscience and Remote Sensing**, Vol. 52, No 7, 2014

D. Oloumi, P. Mousavi, M.I. Pettersson and D. Elliott, "A Modified TEM Horn Antenna Customized for Oil Well Monitoring Applications", **IEEE Transaction on Antennas and Propagation**, Vol. 61, No. 12, pp. 5902 – 5909, 2013

S. Björklund, A. Nelander and M.I. Pettersson, "Auxiliary beam terrain-scattered interference suppression: reflection system and radar performance", **IET Radar, Sonar and Navigation**, Volume 7, No. 3, pp. 836-847, 2013

V. T. Vu, T. K. Sjögren, and M. I. Pettersson, "Fast time-domain algorithms for UWB bistatic SAR processing," **IEEE Transactions on Aerospace and Electronics Systems**, vol. 49, no. 3, pp. 1982-1994, 2013

V. T. Vu, T. K. Sjögren and M. I. Pettersson, "Phase Error Calculation for Fast Time-Domain Bistatic SAR Algorithms", **IEEE Transactions on Aerospace and Electronics Systems**, vol. 49, no. 1, pp. 631–639, 2013

V. T. Vu, T. K. Sjögren and M. I. Pettersson, "On Synthetic Aperture Radar Azimuth and Range Resolution Equations", **IEEE Transactions on Aerospace and Electronics Systems**, vol. 48, no. 2, pp. 78–83, 2012.

T.K. Sjögren, V.T. Vu, M.I. Pettersson, A. Gustavsson, L.M.H. Ulander, "Moving Target Speed Estimation and Refocusing in SAR images", **IEEE Transactions on Aerospace and Electronics Systems**, vol. 48, no. 3, pp. 2426–2436, 2012.

V. Tegnberg, M.I. Pettersson, I. Claesson, "Experimental results of passive imaging of moving continuous broadband sound sources within a sensor field", **IEEE Journal of Oceanic Engineering**, vol. 36, no. 1, pp. 26-37, 2011

V. T. Vu, T. K. Sjögren, M. I. Pettersson, and H. Hellsten, "An impulse response function for evaluation of ultra-wideband SAR imaging," **IEEE Transactions on Signal Processing**, vol. 58, no. 7, pp. 3927-3932, 2010.

V. T. Vu, T. K. Sjögren, and M. I. Pettersson, "Ultra-wideband chirp scaling algorithm," **IEEE Geoscience and Remote Sensing Letter**, vol. 7, no. 2, pp. 281-285, 2010.

V. T. Vu, T. K. Sjögren, M. I. Pettersson, L. Håkansson, A. Gustavsson, and L. M. H. Ulander, "RFI suppression in ultrawideband SAR using an adaptive line enhancer," **IEEE Geoscience and Remote Sensing Letter**, vol. 7, no. 4, pp. 694-698, 2010.

V. T. Vu, T. K. Sjögren, M. I. Pettersson, A. Gustavsson, and L. M. H. Ulander, "Detection of moving targets by focusing in UWB SAR Theory and experimental results," **IEEE Transaction on Geoscience and Remote Sensing**, vol. 48, no. 10, pp. 3799-3815, 2010.

I. Gustavsson, K. Nilsson, J. Zackrisson, J. Garcia-Zubia, U. Hernandez-Jayo, A. Nafalski, Z. Nedic, Ö. Göl, J. Machotka, M.I. Pettersson, T. Lagö, L. Håkansson, "On objectives of instructional laboratories, individual assessment, and use of collaborative remote laboratories", **IEEE Transactions on Learning Technologies**, Vol. 2, No. 4, 2009

K. Nilsson, J. Zackrisson, M. Pettersson, "Remote Access of Computer Controlled Experiments", **International Journal of Online Engineering (iJOE)**, Vol. 4, No. 4, 2008, pp. 52-56

M.I. Pettersson, "Optimum relative speed discretization for detection of moving objects in wide band SAR, **IET(IEEE) Radar, Sonar and Navigation**", Vol. 1, No. 3, 2007, pp. 213-220

M.I. Pettersson, "Detection of moving target in wideband SAR", **IEEE Transactions on Aerospace and Electronics Systems**, Vol. 40, No. 3, July 2004, p 780-9

M.I. Pettersson "Extraction of moving ground targets by a bistatic ultra-wideband SAR", **IEE Proceedings, Radar, Sonar and Navigation**, Vol. 148, No. 1, 2000, pp. 35-40.

W. Dierking, M.I. Pettersson and J. Askne, "Multi-frequency scatterometer measurements of Baltic Sea Ice during EMAC-95", **International Journal of Remote Sensing**, vol. 20, No. 2, 1999, pp. 349-372

M.I. Pettersson, J. Askne and D.J. Cavalieri, "SAR observations of Arctic freeze-up as compared to SSM/I during ARCTIC91", **International Journal of Remote Sensing**, vol. 17, No. 13, 1996, pp. 2603-2624

2. Peer-reviewed conference papers

F. G. Silva, L. P. Ramos, B. G. Palm, D. I. Alves, M. I. Pettersson, R. Machado, "Hybrid feature extraction based on PCA and CNN for oil rig classification in C-Band SAR imagery", Proc. SPIE 12276, Artificial Intelligence and Machine Learning in Defense Applications IV, Berlin, Germany, 2022

G. F. Araujo, R. Machado, M. I. Pettersson "Assessment of preprocessing techniques in a model-based automatic target recognition algorithm for the SAMPLE dataset", Proc. SPIE 12267, Image and Signal Processing for Remote Sensing XXVIII, Berlin, Germany, 2022

Y. Ivanenko, V. T. Vu, J. Barowski, H. Hellsten and M. I. Pettersson, "Phase Control in Interpolation for Backprojection of THz FMCW SAR Signals," 23rd International Radar Symposium (IRS), Gdansk, Poland, 2022

B. G. Palm, S. Javadi, F. M. Bayer, V. T. Vu, M. I. Pettersson, "Inflated Rayleigh Distribution for SAR Imagery Modeling," IEEE International Geoscience and Remote Sensing Symposium, IGARSS 2022, Kuala Lumpur, Malaysia, 2022

S. Javadi, B. G. Palm, V. T. Vu, M. I. Pettersson, "Performance Evaluation of Unsupervised Coregistration Algorithms for Multitemporal SAR Images," IEEE International Geoscience and Remote Sensing Symposium, IGARSS 2022, Kuala Lumpur, Malaysia, 2022

M. Rameez, S. Javadi, M. Dahl and M. I. Pettersson, "Signal Reconstruction Using Bi-LSTM for Automotive Radar Interference Mitigation," 18th European Radar Conference (EuRAD), London, United Kingdom, 2022

G.H.M. Voigt, D.I. Alves, C. Muller, R. Machado, V.T. Vu, M.I. Pettersson, "Change Detection Method for Intensity VHF Wavelength-Resolution SAR images", Conf. 11862, SPIE Remote Sensing, Proceedings of SPIE Vol. 10788, Madrid, 2021

Y. Ivanenko, V.T. Vu, M.I. Pettersson, "Interpolation Methods for SAR Backprojection at THz Frequencies", International Workshop on Mobile THz Systems (IWMTS), Virtual conference, 2021

V.T. Vu, M.I. Pettersson, "Terahertz Three-Dimensional SAR Imaging Using Time- and Frequency-Domain Algorithms", International Workshop on Mobile THz Systems (IWMTS), Virtual conference, 2021

L.P. Ramos, C. Schwartz, D. Alves, D.L. Tomazeli, M.I. Pettersson, V.T. Vu, R. Machado, "Change detection in UWB VHF SAR images exploiting flight heading diversity through robust principal component analysis", Proceedings of SPIE, Vol. 11533, SPIE Remote Sensing, Security + Defence, and Space, Satellites and Sustainability Symposia 2020

T. Pernstål, J. Degerman, V.T. Vu, M.I. Pettersson, "GIP Test for Automotive FMCW Interference Detection and Suppression", 2020 IEEE Radar Conference, Virtual Conference, 2020

D. Alves, C. Muller, P. Kunz de Jesus, V.T. Vu, M.I. Pettersson, R. Machado, B.F. Uchôa-Filho, "Incoherent Change Detection Methods for Wavelength-Resolution SAR Image Stacks Based on Masking Techniques", 2020 IEEE Radar Conference, Virtual Conference, 2020

V.T. Vu, M.I. Pettersson, T. Sjögren, "Change detection and signature classification for SAR GMTI", IEEE Geoscience and Remote Sensing Symposium, IGARSS 2020, Virtual Symposium, 2020

D. Alves, C. Muller, B. Palm, V.T. Vu, M.I. Pettersson, R. Machado, B.F. Uchôa-Filho, "Statistical Analysis for Wavelength-Resolution SAR Image Stacks: New Case Studies", 38th Brazilian Telecommunications and Signal Processing Symposium – SBrT2020, Brazil, 2020

B. Palm, D. Alves, R. Machado, V.T. Vu, M.I. Pettersson, "Computer-Simulated UWB VHF SAR Targets Based on Statistics of Real Data", 38th Brazilian Telecommunications and Signal Processing Symposium – SBrT2020, Brazil, 2020

A. Campus, R.M. Molin, M. Pettersson, V.T. Vu, R. Machado, "Unsupervised automatic target detection for multitemporal SAR images based on adaptive K-means algorithm", IEEE Geoscience and Remote Sensing Symposium, IGARSS 2020, Virtual Symposium, 2020

A. Batra, Y. Zantah, V. T. Vu, M. Wiemeler, M. I. Pettersson, D. Goehringer and T. Kaiser, "Experimental Analysis of High Resolution Indoor THz SAR Imaging", 24th International ITG Workshop on Smart Antennas (WSA 2020), Hamburg, Germany, 2020

V.T. Vu, M.I. Pettersson, T. Sjögren, "Enhancing conventional SAR change detection performance with apodization", IEEE Geoscience and Remote Sensing Symposium, IGARSS 2020, Virtual Symposium, 2020

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V.T. Vu, D. Alves, B. Palm, N. Gomes, M. Pettersson, "Wavelength-resolution SAR Change Detection with Changing Flight Heading During Passes", International Radar Conference, Toulon, France, 2019

A.B. Campos, R.D. Molin Jr., M.I. Pettersson, and R. Machado, "Discrimination Algorithm for False Alarm Reduction in SAR Incoherent Change Detection", 37th Brazilian Telecommunications and Signal Processing Symposium – SBrT2019, Petrópolis, Brazil, 2019

R. Molin Jr, R. Rosa, F. Bayer, M. Pettersson, R. Machado, "A Change Detection Algorithm for SAR Images based on Logistic Regression", IEEE Geoscience and Remote Sensing Symposium, IGARSS 2019, Yokohama, Japan, 2019

V.T. Vu, M.I. Pettersson, T. Sjögren, M. Dahl, "A Measurement Campaign in Harbor to Detect Changes of Activities", IEEE Geoscience and Remote Sensing Symposium, IGARSS 2019, Yokohama, Japan, 2019

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I have written more scientific and technical reports during my time as an employee at FOI and Ericsson that are not public.