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Associate Research Scientist
Department of Electrical Engineering and Computer Science
UNIVERSITY OF MICHIGAN
Role in the Center: Co-Investigator
Areas of Research: Radar, image processing

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A. PROFESSIONAL PREPARATION

The University of Michigan	Electrical Engineering, B.S., 1983
The University of Michigan	Aerospace Engineering, B.S., 1983
The University of Michigan	Electrical Engineering, M.S., 1986
The University of Michigan	Electrical Engineering, Ph.D., 1991

B. APPOINTMENTS

Associate Research Scientist , EECS Department, University of Michigan	2005-present
Assistant Research Scientist , EECS Department, University of Michigan	1991-2005

C. SYNERGISTIC ACTIVITIES

Doctor Pierce has over 15 years of experience with microwave SAR sensors, radar systems, communication channel modeling, and image processing. He has published more than 25 papers in refereed journals on SAR image processing and calibration, random media modeling, wave propagation, and interferometric SAR. He has also had more than 75 papers and invited presentations in many national and international conferences and symposia on similar subjects. Dr. Pierce is a Senior Member of the IEEE, past vice president of the local chapter of the IEEE Geoscience and Remote Sensing Society (GRSS), and past assistant to the chairman of the Awards Committee of the IEEE GRSS.

D. RELATED PUBLICATIONS

1. Pan Liang; Moghaddam, M.; Pierce, L.E.; Lucas, R.M.; "Radar backscattering model for multilayer mixed-species forests," *IEEE Transactions on Geoscience and Remote Sensing*, Volume 43, Issue 11, pp. 2612 – 2626, Nov. 2005.
2. Pan Liang; Pierce, L.E.; Moghaddam, M.; "Radiative transfer model for microwave bistatic scattering from forest canopies," *IEEE Transactions on Geoscience and Remote Sensing*, Volume 43, Issue 11, pp. 2470 – 2483, Nov. 2005.
3. Brown, C.G., Jr.; Sarabandi, K.; Pierce, L.E.; "Validation of the Shuttle Radar Topography Mission height data," *IEEE Trans. on Geoscience and Remote Sensing*, Volume 43, Issue 8, pp. 1707 – 1715, Aug. 2005.
4. Sarabandi, K.; Behdad, N.; Nashashibi, A.; Casciato, M.; Pierce, L.; Feinian Wang; "A measurement system for ultrawide-band communication channel characterization." *IEEE Transactions on Antennas and Propagation*, Volume 53, Issue 7, pp. 2146 – 2155, July 2005.
5. Kellndorfer, Josef, Wayne Walker, Leland Pierce, Craig Dobson, Jo Ann Fites, Carolyn Hunsaker, John Vona and Michael Clutter, "Vegetation height estimation from Shuttle Radar Topography Mission and National Elevation Datasets," *Remote Sensing of Environment*, Vol. 93, No. 3, pp. 339–358, Nov. 2004.
6. Kouskoulas, Y., Pierce, L.E., Ulaby, F.T., "A computationally efficient multivariate maximum-entropy density estimation (MEDE) technique," *IEEE Transactions on Geoscience and Remote Sensing*, Volume 42, Issue 2, pp. 457 – 468, Feb. 2004.
7. Kouskoulas, Y., Ulaby, F.T., Pierce, L.E., "The Bayesian hierarchical classifier (BHC) and its application to short vegetation using multifrequency polarimetric SAR," *IEEE Transactions on Geoscience and Remote Sensing*, Volume 42, Issue 2, pp. 469 – 477, Feb. 2004.
8. Xie, Hua, Leland E. Pierce, Fawwaz T. Ulaby, "SAR Speckle Reduction using Wavelet Denoising and

- Markov Random Field Modeling”, *IEEE Transactions Geoscience and Remote Sensing*, Vol. 40, No. 10, pp. 2196–2212, Oct. 2002.
9. Xie, Hua, Leland E. Pierce, Fawwaz T. Ulaby, “Statistical Properties of Log-Transformed Speckle,” *IEEE Transactions Geoscience and Remote Sensing*, Vol. 40, No. 3, pp. 721–727, March 2002.
 10. de Roo, Roger D., Jiyoun Munn, Leland E. Pierce, Adib Y. Nashashibi, Fawwaz T. Ulaby, Samples, Gregory S., “SPRI: Simulator of Polarimetric Radar Images,” *IEEE Transactions on Aerospace and Electronics Systems*, Vol. 38, No. 1, pp. 251–261, January 2002.
 11. Kobayashi, Yutaka, Kamal Sarabandi, Leland Pierce, M. Craig Dobson, “Evaluation of the JPL TOPSAR for extracting tree heights,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 38, No. 6, pp. 2446–2454, Nov. 2000.
 12. Solaiman, Bassel, Leland E. Pierce, Fawwaz T. Ulaby, “Multisensor Data Fusion Using Fuzzy Concepts: Application to Land-Cover Classification Using ERS-1/JERS-1 SAR Composites,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 37, No. 3, pp. 1316–1326, May 1999.
 13. Bergen, Kathleen, M. Craig Dobson, Leland E. Pierce, Fawwaz T. Ulaby, “Characterizing Carbon in a Northern Forest using SIR-C/X-SAR Imagery,” *Remote Sensing of Environment*, Vol. 63, No. 1, pp. 24–39, Jan. 1998.
 14. Pierce, Leland, E., Kathleen M. Bergen, M. Craig Dobson, and Fawwaz T. Ulaby, “Multi-Temporal Land-Cover Classification using SIR-C/X-SAR Imagery,” *Remote Sensing of Environment*, Vo. 64, No. 1, pp. 20–33, April 1998.
 15. Kellndorfer, Josef M., Leland E. Pierce, M. Craig Dobson, Fawwaz T. Ulaby, “Toward consistent regional-to-global-scale vegetation characterization using orbital SAR systems,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 36, No. 5, pt. 1, pp. 1396–1411, Sep. 1998.
 16. Dobson, M. Craig, Leland E. Pierce, and Fawwaz T. Ulaby, “Knowledge-based Land-cover Classification using ERS-1/JERS-1 SAR Composites,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 33, No. 1, Jan. 1996, 83–99.
 17. Sarabandi, Kamal, Leland E. Pierce, M. Craig Dobson, Fawwaz T. Ulaby, James Stiles, Tsen-Chieh Chiu, Roger D. de Roo, Ron Hartikka, Andrew Zambetti, and Anthony Freeman, “Polarimetric calibration of SIR-C using point and distributed targets,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 33, No. 4, July 1995, 858–866.
 18. Dobson, M. Craig, Fawwaz T. Ulaby, Leland E. Pierce, Terry L. Sharik, Kathleen M. Bergen, Josef M. Kellndorfer, John R. Kendra, Eric Li, Yi Cheng Lin, Adib Y. Nashashibi, Kamal Sarabandi, and Paul Siqueira, “Estimation of Forest Biophysical Characteristics in Northern Michigan with SIR-C/X-SAR,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 33, No. 4, July 1995, 877–895.
 19. Dobson, M. Craig, Fawwaz T. Ulaby, and Leland E. Pierce, “Land-Cover Classification and Estimation of Terrain Attributes Using Synthetic Aperture Radar,” *Remote Sensing of Environment*, Vol. 51, No. 1, Jan. 1995, 199–214.
 20. Sarabandi, Kamal, Leland E. Pierce, Yisok Oh, M. Craig Dobson, Anthony Freeman, and Pascale Dubois, “Cross calibration experiment using JPL AIRSAR and truck-mounted polarimetric scatterometers,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 32, No. 5, Sept. 1994, 975–985.
 21. Pierce, Leland E., Kamal Sarabandi, and Fawwaz T. Ulaby, “Application of an artificial neural network in a canopy scattering model inversion,” *International Journal of Remote Sensing.*, Vol. 15, No. 16, 1994, 3263–3270.
 22. Leland E. Pierce, and Fawwaz T. Ulaby, Kamal Sarabandi, M. Craig Dobson, “Knowledge-Based Classification of Polarimetric SAR Images,” *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 32, No. 5, Sept. 1994, 1081–1086.