

Curriculum Vitae

MUSTAFA AKSOY

Assistant Professor
Department of Electrical and Computer Engineering
University at Albany, SUNY

E-mail: maksoy@albany.edu
<https://www.linkedin.com/in/mustafaaksoy>
<http://www.albany.edu/ceas/mustafa-aksoy.php>

EDUCATION:

The Ohio State University, Columbus, OH Electrical and Computer Engineering Thesis: "RFI Characterization and Detection in L-band Microwave Radiometry"	Doctor of Philosophy, 2015
The Ohio State University, Columbus, OH Electrical and Computer Engineering	Master of Science, 2014
Bilkent University, Ankara, Turkey Electrical and Electronics Engineering	Bachelor of Science, 2010

RESEARCH INTERESTS:

Remote sensing of earth using microwave radiometry, electromagnetic theory, geosciences, signal processing, and data analysis. Specific research efforts involve ultra-wideband subsurface remote sensing, radiometer calibration techniques, and developing radio frequency interference (RFI) detection and mitigation algorithms for microwave radiometers.

PROFESSIONAL EXPERIENCE:

Assistant Professor Dept. of Electrical and Computer Engineering University at Albany	Sep. 2017 – Present
Post-Doctoral Research Associate Joint Center for Earth Systems Technology University of Maryland Baltimore County NASA Goddard Space Flight Center	Jan. 2016 – Aug. 2017

Graduate Research Associate Oct. 2010 – Dec. 2015
The Ohio State University, Columbus, OH
Dept. of Electrical and Computer Engineering
ElectroScience Laboratory

Intern Jun. 2009 – Jul. 2009
ASELSAN A.Ş., Ankara, Turkey
Radar System Engineering Department

Intern Jul. 2008 – Aug. 2008
Turkish Telecommunication I.C., Ankara, Turkey
Informatics Network Department

PROFESSIONAL SOCIETIES AND ACTIVITIES:

Member
The Institute of Electrical and Electronics Engineers (IEEE)
The IEEE Geoscience and Remote Sensing Society (GRSS)
The IEEE GRSS's Frequency Allocations in Remote Sensing (FARS) Committee

Reviewer
IEEE Transactions on Geoscience and Remote Sensing
IEEE Geoscience and Remote Sensing Letters
IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

COMPUTER SKILLS:

Matlab, Simulink, Fortran, Python, SQL, VHDL, Java, C++, AutoCAD, Microsoft Office

TEACHING

Spring 2018 ICEN280 – Introduction to Circuits
Fall 2017 ICEN140 – Introduction to Engineering Design

UNIVERSITY SERVICE

2017-2018 Undergraduate Studies Committee Member
University at Albany, Department of Electrical and Computer Engineering

PUBLICATIONS:**Journal Publications:**

1. Jezek, K.; Johnson, J.; Tan, S.; Tsang, L.; Andrews, M.; Brogioni, M.; Macelloni, G.; Durand, M.; Chen, C.; Belgiovane, D.; Duan, Y.; Yardim, C.; Li, H.; Bringer, A.; Leuski, V.; Aksoy, M., "500-2000 MHz Brightness-Temperature Spectra of the Northwestern Greenland Ice Sheet," *Geoscience and Remote Sensing, IEEE Transactions on*, vol. 56, no. 3, pp.1485-1496, Mar. 2018.
doi: 10.1109/TGRS.2017.2764381
2. Mohammed, P.N.; Aksoy, M.; Piepmeier, J.R.; Johnson, J.T.; Bringer, A., "SMAP L-band Microwave Radiometer: RFI Mitigation Pre-Launch Analysis and First Year On-Orbit Observations," *Geoscience and Remote Sensing, IEEE Transactions on*, vol. 54, no. 10, pp.6035-6047, Oct. 2016.
doi: 10.1109/TGRS.2016.2580459.
3. Aksoy, M.; Johnson, J.T.; Misra, S.; Colliander, A.; O'Dwyer, I., "L-Band Radio Frequency Interference Observations during the SMAP Validation Experiment 2012," *Geoscience and Remote Sensing, IEEE Transactions on*, vol. 54, no. 3, pp.1323-1335, Mar. 2016.
doi: 10.1109/TGRS.2015.2477686
4. Tan, S.; Aksoy, M.; Brogioni, M.; Macelloni, G.; Durand, M.; Jezek, K.; Wang, T.; Tsang, L.; Johnson, J.T.; Drinkwater, M.; Brucker, L., "Physical Models of Layered Polar Firn Brightness Temperatures from 0.5GHz to 2GHz," *Selected Topics in Applied Earth Observations and Remote Sensing, IEEE Journal of*, vol. 8, no. 7, pp. 3681-3691, July 2015.
doi: 10.1109/JSTARS.2015.2403286
5. Jezek, K.C.; Johnson, J.T.; Drinkwater, M.R.; Macelloni, G.; Leung Tsang; Aksoy, M.; Durand, M., "Radiometric Approach for Estimating Relative Changes in Intraglacier Average Temperature," *Geoscience and Remote Sensing, IEEE Transactions on*, vol.53, no.1, pp.134,143, Jan. 2015.
doi: 10.1109/TGRS.2014.2319265
6. Piepmeier, J.R.; Johnson, J.T.; Mohammed, P.N.; Bradley, D.; Ruf, C.; Aksoy, M.; Garcia, R.; Hudson, D.; Miles, L.; Wong, M., "Radio-Frequency Interference Mitigation for the Soil Moisture Active Passive Microwave Radiometer," *Geoscience and Remote Sensing, IEEE Transactions on*, vol.52, no.1, pp.761,775, Jan. 2014.
doi: 10.1109/TGRS.2013.2281266
7. Aksoy, M.; Johnson, J.T., "A Comparative Analysis of Low-Level Radio Frequency Interference in SMOS and Aquarius Microwave Radiometer Measurements," *Geoscience and Remote Sensing, IEEE Transactions on*, vol.51, no.10, pp.4983,4992, Oct. 2013.
doi: 10.1109/TGRS.2013.2266278

8. Aksoy, M.; Johnson, J.T., "A Study of SMOS RFI Over North America," *Geoscience and Remote Sensing Letters, IEEE* , vol.10, no.3, pp.515,519, May 2013.
doi: 10.1109/LGRS.2012.2211993

Conference Publications:

1. Aksoy, M.; Racette P. E., "Tracking Calibration Stability in Climate Monitoring Microwave Radiometers using On-board 3-Point Calibration," *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Fort Worth, TX, 2017, pp. 2118-2120.
doi: 10.1109/IGARSS.2017.8127402
2. Johnson, J. T.; Mohammed P.N.; Piepmeier J.R.; Bringer, A.; Aksoy, M., "Soil Moisture Active Passive (SMAP) microwave radiometer radio-frequency interference (RFI) mitigation: Algorithm updates and performance assessment," *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Beijing, China, 2016, pp. 123-124.
doi: 10.1109/IGARSS.2016.7729022
3. Johnson, J. T.; Jezek, K. C.; Aksoy, M.; Bringer, A.; Yardim, C.; Andrews, M.; Chen, C. C.; Belgiovane, D.; Leuski, V.; Durand, M., Duan, Y., Macelloni, G.; Brogioni, M.; Tan, S.; Wang, T. L.; Tsang, L., "The Ultra-wideband Software-Defined Radiometer (UWBRAD) for ice sheet internal temperature sensing: Results from recent observations," *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Beijing, China, 2016, pp. 7085-7087.
doi: 10.1109/IGARSS.2016.7730848
4. Duan, Y.; Durand, M.; Jezek, K.; Yardim, C.; Bringer, A.; Aksoy, M.; Johnson, J., "Testing the feasibility of a bayesian retrieval of greenland ice sheet internal temperature from ultra-wideband software-defined microwave radiometer (UWBRAD) measurements," *2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Beijing, China, 2016, pp. 7092-7093.
doi: 10.1109/IGARSS.2016.7730850
5. Aksoy, M.; Johnson, J.T.; Misra, S., "Radio frequency interference observations using an L-Band direct sampling receiver during the SMAPVEX12 airborne campaign," *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International* , vol., no., pp.219,222, 13-18 July 2014.
doi: 10.1109/IGARSS.2014.6946396
6. Aksoy, M.; Johnson, J.T.; Jezek, K.C.; Durand, M.; Drinkwater, M.; Macelloni, G.; Leung Tsang, "An examination of multi-frequency microwave radiometry for probing subsurface ice sheet temperature," *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International* , vol., no., pp.3614,3617, 13-18 July 2014.
doi: 10.1109/IGARSS.2014.6947265

7. Macelloni, G.; Brogioni, M.; Aksoy, M.; Johnson, J.T.; Jezek, K.C.; Drinkwater, M.R., "Understanding SMOS data in Antarctica," *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International* , vol., no., pp.3606,3609, 13-18 July 2014.
doi: 10.1109/IGARSS.2014.6947263
8. Bradley, D.; Morris, J.M.; Adali, T.; Johnson, J.T.; Aksoy, M., "On the detection of RFI using the complex signal kurtosis in microwave radiometry," *Microwave Radiometry and Remote Sensing of the Environment (MicroRad), 2014 13th Specialist Meeting on* , vol., no., pp.33,38, 24-27 March 2014.
doi: 10.1109/MicroRad.2014.6878903
9. Misra, S.; Johnson, J.; Aksoy, M.; Jinzheng Peng; Bradley, D.; O'Dwyer, I.; Padmanabhan, S.; Dawson, D.; Chazanoff, S.; Latham, B.; Gaier, T.; Flores-Helizon, C.; Denning, R., "SMAP RFI mitigation algorithm performance characterization using airborne high-rate direct-sampled SMAPVEX 2012 data," *Geoscience and Remote Sensing Symposium (IGARSS), 2013 IEEE International* , vol., no., pp.41,44, 21-26 July 2013.
doi: 10.1109/IGARSS.2013.6721087
10. Aksoy, M.; Johnson, J.; Misra, S.; O'Dwyer, I., "RFI characterization for SMAP using L-band direct sampled data obtained during the SMAPVEX12 airborne campaign," *Radio Science Meeting (USNC-URSI NRSM), 2013 US National Committee of URSI National* , vol., no., pp.1,1, 9-12 Jan. 2013.
doi: 10.1109/USNC-URSI-NRSM.2013.6524989
11. Misra, S.; Johnson, J.; Aksoy, M.; Bradley, D.; Hsin Li; Mederios, J.; Piepmeier, J.; O'Dwyer, I., "Performance characterization of the SMAP RFI mitigation algorithm using direct-sampled SMAPVEX 2012 data," *Radio Science Meeting (USNC-URSI NRSM), 2013 US National Committee of URSI National* , vol., no., pp.1,1, 9-12 Jan. 2013.
doi: 10.1109/USNC-URSI-NRSM.2013.6524988
12. Aksoy, M.; Park, J.; Johnson, J.T., "Joint analysis of radio frequency interference from SMOS measurements and from airborne observations," *General Assembly and Scientific Symposium, 2011 XXXth URSI* , vol., no., pp.1,4, 13-20 Aug. 2011.
doi: 10.1109/URSIGASS.2011.6050795
13. Johnson, J.T.; Aksoy, M., "Studies of radio frequency interference in SMOS observations," *Geoscience and Remote Sensing Symposium (IGARSS), 2011 IEEE International* , vol., no., pp.4210,4212, 24-29 July 2011.
doi: 10.1109/IGARSS.2011.6050159

Conference Presentations:

1. Aksoy, M.; Racette, P.E., “Tracking Radiometer Calibration Stability Using Three-Point Onboard Calibration,” presented at the *15th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*, March 2018, Cambridge, MA.
2. Aksoy, M.; Racette, P.E., “Ensemble Detection Analysis in Space-borne Doppler Measurements USNC-URSI National Radio Science Meeting,” presented at *URSI National Radio Science Meeting*, Jan 2018, Boulder, CO.
3. Aksoy, M.; Racette, P.E., “Ensemble Detection Analysis for Characterizing Non-Stationary Processes USNC-URSI National Radio Science Meeting,” presented at *URSI National Radio Science Meeting*, Jan 2018, Boulder, CO.
4. Jezek, K.; Johnson, J.T.; Durand, M.; Aksoy, M.; Tsang, L.; Wang, T.; Tan. S.; Macelloni, G.; Brogioni, M.; Drinkwater, M., “Ice Sheet Thermometry Using Wideband Radiometry,” presented at *2014 American Geophysical Union’s Fall Meeting*, December 2014, San Francisco, CA.
5. Aksoy, M.; Johnson, J.T., “The Ultrawideband Software-Defined Microwave Radiometer,” presented at *2014 Earth Science Technology Forum*, October, 2014, Leesburg, VA.
6. Aksoy, M.; Johnson, J.T.; Piepmeier, J.; Mohammed, P., “A Study of Radio Frequency Interference Detection for the SMAP Radiometer,” presented at the *13th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*, March 2014, Pasadena, CA.
7. Aksoy, M.; Johnson, J.T.; Jezek, K., “Remote Sensing of Ice Sheet Subsurface Temperatures,” presented at the *13th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*, March 2014, Pasadena, CA.
8. Jezek, K.; Johnson, J.T.; Aksoy, M., “Radiometric Approach for Estimating Relative Changes in Intra-Glacier Average Temperature,” presented at *2012 American Geophysical Union’s Fall Meeting*, December 2012, San Francisco, CA.
9. Johnson, J.T.; Aksoy, M., “A Study of Radio Frequency Interference for Current and Future L Band Microwave Radiometry Missions,” presented at *2012 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, July 2012, Munich, Germany.
10. Aksoy, M.; Johnson, J.T., “Radio Frequency Interference Analysis of L-Band Microwave Radiometry Missions,” presented at *URSI National Radio Science Meeting*, Jan 2012, Boulder, CO.
11. Aksoy, M.; Johnson, J.T., “Statistical Analysis of SMOS Radio Frequency Interference,” presented at *URSI National Radio Science Meeting*, Jan 2011, Boulder, CO.

AWARDS:

1. NASA “Robert H. Goddard Exceptional Achievement for Engineering” award as a member of SMAP radiometer Level 1 algorithm development team, March 2016.

GRANTS:

1. Title: Ensemble Detector: A Novel Tool for Analysis of Non-Stationary Processes
Project PI: Mustafa Aksoy (Sole PI)
Source of Support: NASA
Total Budget: \$55,481
Duration: Apr 20, 2018 – Apr 19, 2019
2. IEEE Geoscience and Remote Sensing Society Travel Grant, \$300, July 2017.
3. The U.S. National Committee for the International Union of Radio Science (USNC-URSI) Travel Fellowship Grant, \$600, January 2013.
4. The U.S. National Committee for the International Union of Radio Science (USNC-URSI) Travel Fellowship Grant, \$600, January 2012.
5. The U.S. National Committee for the International Union of Radio Science (USNC-URSI) Travel Fellowship Grant, \$600, January 2011.