

# SHOUHEI KIDERA

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Graduate School of Informatics and Engineering  
The University of Electro-Communications  
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## Curriculum Vitae

### Education

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Sep. 2007	<b>Ph.D in Informatics</b> <i>Graduate School of Informatics, Kyoto University, Kyoto, Japan</i> “High Performance 3-D Imaging Algorithm for UWB Pulse Radars” Main Advisor : Prof. Toru Sato (Kyoto University), Advisors : Prof. Takashi Matsuyama (Kyoto University) and Prof. Tetsuya Matsuda (Kyoto University)
Mar. 2005	<b>Master degree in Informatics</b> <i>Graduate School of Informatics, Kyoto University, Kyoto, Japan</i> “Development of High-Resolution Imaging Algorithm Based on Waveform Estimation for UWB Pulse Radar Systems” Main Advisor : Prof. Toru Sato (Kyoto University)
Mar. 2003	<b>Bachelor degree in Electric and Electronic Engineering.</b> <i>Faculty of Electric and Electronic Engineering, Kyoto University</i> “Development of Accurate Imaging Algorithm for UWB Pulse Radar System” Main Advisor : Prof. Toru Sato (Kyoto University)

### Professional Experience

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Sep. 2014 – present.	<b>Associate Professor,</b> Graduate School of Informatics and Engineering,
Apr. 2010 – Aug. 2014.	<b>Assistant Professor,</b> Graduate School of Informatics and Engineering, University of Electro-Communications
Apr. 2009 – Mar. 2010.	<b>Assistant Professor,</b> Graduate School of Electro-Communications, University of Electro-Communications
Oct. 2007 – Mar. 2009.	<b>JSPS Postdoctoral Fellow,</b> Graduate School of Informatics, Kyoto University
Apr. 2007 – Sep. 2007.	<b>JSPS Doctoral Fellow,</b> Graduate School of Informatics, Kyoto University
Apr. 2005 – Mar. 2007.	<b>Research Associate,</b> Graduate School of Informatics, Kyoto University The 21th Century COE (Center Of Excellence) Program

### Current Research Interests

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- Electromagnetic inverse scattering analysis
- Advanced radar signal or image processing
- UWB sensor and remote sensing
- Development for super-resolution 3-D imaging theory and algorithm
- Shadow region imaging using multiple scattering waves
- Target recognition with machine learning approach
- Polarimetric and interferometric radar
- Moving target tracking and imaging
- Synthetic aperture radar (SAR)
- Bio-medical microwave imaging for breast tumor detection

- Non-destructive testing application
- Automobile radar application

## Professional Awards & Honors

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- Apr. 2014 **Funai Achievement Award**, Awardee : S. Kidera  
The Funai Foundation for Information Technology  
For contribution of development of an super-resolution and shadow region imaging method for UWB sensor
- Apr. 2013 **Young Scientist's Prize**, Awardee : S. Kidera  
The Japanese Minister of Education, Culture, Sports, Science and Technology (MEXT).  
For contribution of development of an innovative imaging method for UWB sensor
- Mar. 2013 **TELECOM System Technology Award**, Awardee : S. Kidera and T. Kirimoto  
The Telecommunications Advancement Foundation  
With the paper: S. Kidera and T. Kirimoto,  
"Fast and Shadow Region 3-dimensional Imaging Algorithm with Range Derivative of Doubly Scattered Signals for UWB Radars",  
*IEEE Trans. on Antennas and Propagation*, vol.60, No. 2, pp. 984–996, Feb, 2012.
- Mar. 2013 **IEEE AESS Japan Chapter 2012 Best Paper Award**, Awardee : S. Kidera  
IEEE AESS Japan Chapter  
With the paper: S. Kidera, H. Yamada and T. Kirimoto,  
"Accurate 3-dimensional Imaging Method Based on Extended RPM for Rotating Target Model", *IEICE Trans. Commun.* vol.E95-B, no. 10, pp. 3279-3289, Oct., 2012.
- Jul. 2012 **Ando Incentive Prize for the Study of Electronics**, Awardee : S. Kidera  
The Foundation of Ando Laboratory,  
For contribution of development of super-resolution and shadow region imaging method for UWB radar.
- Oct. 2011 **Young Scientist Award**,  
Awardee : S. Kidera and T. Kirimoto  
The 2011 International Symposium on Antennas and Propagation (ISAP2011)  
With the paper: S. Kidera and T. Kirimoto,  
"Accurate Shadow Region Imaging Algorithm Based on Doubly Scattered Range Points Migration for UWB Radars"
- Aug. 2011 **Young Scientist Award**, Awardee : S. Kidera  
The XXXth General Assembly and Scientific Symposium of the International Union of Radio Science (URSI) 2011  
With the paper: S. Kidera and T. Kirimoto,  
"Accurate 3-dimensional Image Expansion Algorithm Using Range Derivative of Double Scattered Signals for UWB Radars",
- Aug. 2010 **Young Scientist Award**, Awardee : S. Kidera  
URSI Commission B, 20th International Symposium on Electromagnetic Theory (EMTS) 2010  
With the paper: S. Kidera, T. Sakamoto and T. Sato,  
"Experimental Study on Super-Resolution 3-D Imaging Algorithm Based on Extended Capon with Reference Signal Optimization for UWB Radars"
- Mar. 2010 **IEICE Young Researcher's Award**, Awardee : S. Kidera  
The Institute of Electronics, Information and Communication Engineers (IEICE)  
For the papers presented in the general and the society conference in IEICE 2009.
- Aug. 2008 **IEEJ Excellent Presentation Award**, Awardee : S. Kidera  
The Institute of Electrical Engineers Japan (IEEJ)  
With the paper: S. Kidera, T. Sakamoto, T. Sato,  
"An Experimental Study for High-Speed and Accurate 3-D Imaging Algorithm with Spectrum Shift Correction for UWB Pulse Radars," IEEJ 36th Electromagnetic Theory Symposium, EMT-07-116, Oct. 2007 (in Japanese).
- Sep. 2007 **Best Student Paper Award**, Awardee : S. Kidera, T. Sakamoto and T. Sato  
2007 IEEE International Conference on Ultra Wide-Band 2007,  
With the paper: S. Kidera, T. Sakamoto, T. Sato,  
"An Experimental Study for High-Resolution 3-D Imaging Algorithm with Linear Array for UWB Radars".  
2007 IEEE International Conference on Ultra-WideBand (ICUWB2007), Marina Mandarin Hotel, Singapore, Sep. 2007
- Sep. 2007 **IEICE Communication Society Best Paper Award**, Awardee : T. Sakamoto, S. Kidera, T. Sato and S. Sugino  
Communications Society, IEICE  
With the paper T. Sakamoto, S. Kidera, T. Sato, S. Sugino,  
"An Experimental Study on a Fast 3-D Imaging Algorithm for UWB Pulse Radars", Vol. J90-B, No. 1, pp.63-73, Jan 2007 (in Japanese).

## Professional Activities

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- Member, *IEEE (The Institute of Electrical and Electronics, Engineers)*
- Member, *IEICE (The Institute of Electronics, Information and Communication Engineers)*
- Member, *IEEJ (The Institute of Electrical Engineers Japan)*
- Associate Editor for *IEICE Transaction on Electronics, Special Section on Recent Progress in Electromagnetic Theory and Its Application*, 2011 - Present.
- Secretary of Technical Committee for *IEICE SANE (Space Aeronautical and Navigational Electronics)*, 2013 - Present.
- Secretary of Steering Committee for *APSAR (Asia-Pacific Conference on Synthetic Aperture Radar) 2013*, 2011 - Present.
- Chair of Sponsorship Committee for *IEEE IGARSS (International Geoscience and Remote Sensing Symposium) 2019*, 2015 - Present.
- Expert Member of Technical Committee for *IEICE EMT (Electromagnetic Theory)*, 2009 - Present.
- Reviewer for *Radio Science*,
- Reviewer for *IEEE Trans. Geoscience and Remote Sensing*,
- Reviewer for *IEEE Geoscience and Remote Sensing Letters*,
- Reviewer for *IEEE Trans. Antennas and Propagation*,
- Reviewer for *IEEE Trans. Microwave Theory and Technology*,
- Reviewer for *IEICE Trans. Communications*,
- Reviewer for *IEICE Trans. Electronics*,
- Reviewer for *IEICE Trans. Fundamentals*,
- Reviewer for *IEICE Trans. Information & Systems*,

## Refereed Journal Articles <sup>1</sup>

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Dr. Kidera's articles have been cited in scientific publications by 178 times (Self-citations: 89 times, Average citation times : 3.07). Referenced from ISI Web of Science Citation Index Expanded, 2006-present, Institute for Scientific Information.

1. Ryo Oyama, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Coherent Change Detection Method Based on Pauli Decomposition for Fully Polarimetric SAR Imagery", , *IEICE Trans. Commun.*, vol. E98-B, no. 7, pp. 1390–1395, July, 2015.
2. Ryo Yamaguchi, **Shouhei Kidera**, Tetsuo Kirimoto, "3-dimensional Imaging and Motion Estimation Method of Multiple Moving Targets for Multi-static UWB Radar Using Target Point and its Normal Vector", , *IEICE Trans. Commun.*, vol. E97-B, no. 12, pp. 2819-2829, Dec., 2014.
3. Shuri Kondo, **Shouhei Kidera**, Tetsuo Kirimoto, "Target Detection Algorithm using Independent Component Analysis for Pulse Doppler Radar", , *IEICE Communication Express*, vol. 3, No. 7, pp. 211-216, July, 2014.
4. Ayumi Yamaryo, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Target Extrapolation Method Exploiting Double Scattered Range Points for UWB radar", , *IEICE Trans. Electron.*, vol. E97-C No. 8 pp. 828–832, Aug, 2014.
5. Shouhei Ohno, **Shouhei Kidera**, Tetsuo Kirimoto, "Efficient SOM Based ATR Method for SAR Imagery with Azimuth Angular Variations", *IEEE Geoscience and Remote Sensing Letters*, vol. 11, No. 11, pp. 1901-1905, Nov., 2014.
6. Ryo Nakamata, **Shouhei Kidera and** Tetsuo Kirimoto, "Accurate Height Change Estimation Method Using Phase Interferometry of Multiple Band-Divided SAR Images", , *IEICE Trans. Commun.*, vol. E97-B, No. 6, pp. 1205-1214, June, 2014.
7. Ryunosuke Souma, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Permittivity Estimation Method for 3-dimensional Dielectric Object with FDTD-based Waveform Correction", , *IEICE Trans. Electronics*, vol. E97-C, no. 2, (in press) 2014.
8. Jing-Chao Li, Yi-Bing Li, **Shouhei Kidera** and Tetsuo Kirimoto, "A Robust Signal Recognition Method for Communication System under Time-varying SNR Environment", *IEICE Trans. Information and Sytem.*, vol. E96-D, no. 12, pp. 2814–2819, Dec., 2013.
9. **Shouhei Kidera** and Tetsuo Kirimoto, "Efficient Three-Dimensional Imaging Method Based on Enhanced Range Points Migration for UWB Radars", *IEEE Geoscience and Remote Sensing Letters*, vol. 10, no. 5, pp. 1104–1108, Sep., 2013.

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<sup>1</sup>The names of students directly supervised by Dr. S. Kidera are underlined.

10. Ryo Yamaguchi, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Imaging Method for Moving Target with Arbitrary Shape for Multi-static UWB Radar", *IEICE Trans. Commun.*, vol. E96-B, no. 7, pp. 2014–2023, Jul., 2013.
11. Tetsuhiro Okano, **Shouhei Kidera** and Tetsuo Kirimoto, " Super Resolution TOA Estimation Algorithm with Maximum Likelihood ICA Based Pre-processing" , *IEICE Trans. Commun.*, vol. E96-B, no. 5, pp. 1194–1201, May 2013.
12. Ryunosuke Souma, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Permittivity Estimation Method with Iterative Waveform Correction for UWB Internal Imaging Radar" , *IEICE Trans. Electronics*, vol. E96-C, no. 5, pp. 730-737, May 2013.
13. **Shouhei Kidera** and Tetsuo Kirimoto, "Robust and Accurate Image Expansion Algorithm Based on Double Scattered Range Points Migration for UWB Imaging Radars", , *IEICE Trans. Commun.* vol.E96-B, no. 4, pp. 1061-1069, Apr. 2013.
14. Yoshihiro Niwa, **Shouhei Kidera**, Tetsuo Kirimoto, "Image Expansion Approach for Target Buried in Dielectric Medium with Extended RPM to Multi-static UWB Radar" , *IEICE Trans. Electronics* (Brief paper), vol. E96-B, No. 1, pp.119-123, Jan.,2013..
15. **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate and Robust Automatic Target Recognition Method for SAR Imagery with SOM-Based Classification" , , *IEICE Trans. Commun.* vol.E95-B, no. 11, pp. 3556-3562, Nov., 2012..
16. Tetsuhiro Okano, **Shouhei Kidera** and Tetsuo Kirimoto, "MLICA-based Separation Algorithm for Complex Sinusoidal Signals with PDF Parameter Optimization" , *IEICE Trans. Commun.*,vol. E95-B,No.11 pp.3563-3571, Nov., 2012.
17. **Shouhei Kidera**, Hiroyuki Yamada and Tetsuo Kirimoto, "Accurate 3-dimensional Imaging Method Based on Extended RPM for Rotating Target Model", , *IEICE Trans. Commun.* vol.E95-B, no. 10, pp. 3279-3289, Oct., 2012.
18. Ken Akune, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate and Nonparametric Imaging Algorithm for Targets Buried in Dielectric Medium for UWB Radars" , *IEICE Trans. Electronics.*,vol. E95-C, no. 8, pp. 1389-1398, Aug., 2012.
19. Yoriaki Abe, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Image Expansion Method Using Range Points Based Ellipse Fitting for UWB Imaging Radar" , *IEICE Trans. Commun.*,vol. E95-B, no. 7, pp. 2424-2432, July, 2012.
20. **Shouhei Kidera** and Tetsuo Kirimoto, " Fast and Shadow Region 3-dimensional Imaging Algorithm with Range Derivative of Doubly Scattered Signals for UWB Radars" , , *IEEE Trans. on Antennas and Propagation*, vol.60, No. 2, pp. 984–996, Feb, 2012.
21. Kenshi Saho, Tomoki Kimura, **Shouhei Kidera**, Hirofumi Taki, Takuya Sakamoto and Toru Sato, "Robust and Accurate Ultrasound 3-D Imaging Algorithm Incorporating Adaptive Smoothing Techniques" , *IEICE Trans. Commun.*,vol. E95-B, No. 2, pp. 572–580, Feb., 2012.
22. Yoriaki Abe, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate and Omni-directional UWB Radar Imaging Algorithm with RPM Method Extended to Curvilinear Scanning Model" , *IEEE Geoscience and Remote Sensing Letters*, vol. 9, No. 1, pp. 144-148, Jan., 2012.
23. Takehiro Hoshino, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Surface Change Detection Method Using Phase of Coherence Function on SAR Imagery" , *IEICE Trans. Commun.*, vol. E95-B, No. 1, pp. 263–270, Jan, 2012.
24. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Extended Imaging Algorithm Based on Aperture Synthesis with Double Scattered Waves for UWB Radars" , , *IEEE Trans. on Geoscience and Remote Sensing*, vol.49, no.12, pp. 5128–5139, Dec., 2011.
25. Waqas Muhammad, **Shouhei Kidera** and Tetsuo Kirimoto, "PCA-Based Detection Algorithm of Moving Target Buried in Clutter in Doppler Frequency Domain" , *IEICE Trans. Commun.* (Letter), vol. E94-B, No. 11, pp. 3190–3194, Nov., 2011.
26. Ken Akune, **Shouhei Kidera**, Tetsuo Kirimoto, "Acceleration for Shadow Region Imaging Algorithm with Multiple Scattered Waves for UWB Radars" , *IEICE Trans. Commun.* (Letter), vol. E94-B, No. 9, pp.2696–2699, Sep, 2011.
27. **Shouhei Kidera** and Tetsuo Kirimoto, "Multi-Static UWB Radar Approach Based on Aperture Synthesis of Double Scattered Waves for Shadow Region Imaging" , *IEICE Trans. Electronics*, (Brief Paper), vol.E94-C, No. 8, pp. 1320–1323, Aug, 2011.
28. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Super-Resolution UWB Radar Imaging Algorithm Based on Extended Capon with Reference Signal Optimization", *IEEE Trans. Antennas & Propagation*, vol.59, no. 5, pp. 1606–1615, May, 2011.
29. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Accurate UWB Radar 3-D Imaging Algorithm for Complex Boundary without Range Points Connections", *IEEE Trans. Geoscience and Remote Sensing*, vol.48, no. 4, pp. 1993–2004, Apr., 2010.
30. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "High-Resolution 3-D Imaging Algorithm with an Envelope of Modified Spheres for UWB Through-the-Wall Radars", *IEEE Trans. Antennas & Propagation*, vol.57, no.11, pp. 3520–3529, Nov., 2009.
31. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "High-resolution and Real-Time 3-D Imaging Algorithm with Envelope of Spheres for UWB Radars" , *IEEE Trans. Geoscience and Remote Sensing*, vol.46, no.11, pp.3503–3513, Nov, 2008.
32. **Shouhei Kidera**, Yusuke Kani, Takuya Sakamoto and Toru Sato, "Fast and Accurate 3-D Imaging Algorithm with Linear Array Antennas for UWB Pulse Radars", *IEICE Trans. Commun.*, vol.E91-B, no.8, pp. 2683–2691, Aug, 2008.

33. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A robust and fast imaging algorithm with an envelope of circles for UWB pulse radars", *IEICE Trans. Commun.*, vol.E90-B, no.7, pp.1801–1809, Jul, 2007.
34. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A high-resolution imaging algorithm without derivatives based on waveform estimation for UWB pulse radars", *IEICE Trans. Commun.*, vol.E90-B, no.6, pp.1487–1494, Jun, 2007.
35. (In Japanese) Takuya Sakamoto, **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "An experimental study on a fast 3-D imaging algorithm for UWB pulse radars", *IEICE Trans. Commun.*, Japanese Edition, vol.J90-B, no.1, pp.66-73, Jan, 2007.
36. **Shouhei Kidera**, Takuya Sakamoto, Toru Sato and Satoshi Sugino, "An accurate imaging algorithm with scattered waveform estimation for UWB pulse radars", *IEICE Trans. Commun.*, vol. E89-B, no. 9, pp. 2588-2595, Sep, 2006

## Invited Presentations

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1. **Shouhei Kidera**, "SUPER-RESOLUTION AND ACCURATE 3-DIMENSIONAL IMAGING METHOD BY COMBINING EM COMPUTATIONAL ANALYSIS IN SHORT RANGE UWB RADAR," URSI Atrantic Radio Science Conference (AT-RASC 2015)2015, Gran Canaria, Canary Island, Spain, May, 2015.
2. **Shouhei Kidera**, "Short range UWB radar imaging method," The 57th Automatic Control Conference, Ikaho, Gunma, Japan. Nov. 2014
3. **Shouhei Kidera**, "Near Field Imaging Method for UWB Radar System," The 4th Trans-disciplinary Federation of Science and Technology Conference, Kanazawa, Japan. Nov. 2011
4. **Shouhei Kidera** and Tetsuo Kirimoto, "Emerging Trend of Imaging Radar Techniques," Technical Lecture on Mitsubishi Advanced Technology R&D Center, Hyogo, Japan. Sep, 2010.
5. **Shouhei Kidera**, "Extended Imaging Algorithms for Super-Resolution Radar Techniques," Taiwan-Japan Joint Workshop on Inverse Problem, Institute of Mathematics, Academia Sinica, Taipei, Taiwan. Nov. 2008.
6. **Shouhei Kidera**, "Inverse Problem in Pulse Radar Imaging Techniques," Taiwan-Japan Joint Workshop on Inverse Problem, Institute of Mathematics, Academia Sinica, Taipei, Taiwan. Feb. 2007.

## Refereed Proceedings of International Conference <sup>1</sup> <sup>2</sup>

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1. **Shouhei Kidera**, Cheng Gao, Takaya Taniguchi, Tetsuo Kirimoto, "ELLIPSE BASED IMAGE EXTRAPOLATION METHOD WITH RPM IMAGING FOR THROUGH-THE-WALL UWB RADAR," 2015 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2015, Milan, Italy, July, 2015.
2. Shouhei Ohno, **Shouhei Kidera**, Tetsuo Kirimoto, "AUTOMATIC TARGET RECOGNITION METHOD BASED ON POL-SAR IMAGES WITH CIRCULAR POLARIMETRIC BASIS CONVERSION," 2015 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2015, Milan, Italy, July, 2015.
3. Ryo Oyama, **Shouhei Kidera**, Tetsuo Kirimoto, "SURFACE HEIGHT CHANGE ESTIMATION METHOD USING BAND-DIVIDED COHERENCE FUNCTION WITH FULL POLARIMETRIC SAR IMAGES," 2015 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2015, Milan, Italy, July, 2015.
4. **Shouhei Kidera**, Yoshihiro Niwa and Tetsuo Kirimoto, "HIGH-SPEED AND ACCURATE DIELECTRIC CONSTANT ESTIMATION METHOD USING RPM BOUNDARY EXTRACTION AND FDTD BASED ANALYSIS," URSI Atrantic Radio Science Conference (AT-RASC 2015)2015, Gran Canaria, Canary Island, Spain, May, 2015.
5. Toshiki Manaka, **Shouhei Kidera**, Tetsuo Kirimoto, "Target Detection Algorithm using Independent Component Analysis for Pulse Doppler Radar", " Experimental Study on Permittivity Estimation Method for UWB Internal Imaging Radar," 2014 International Symposium on Antennas and Propagation (ISAP2014), Kaohsiung, Taiwan, Dec., 2014.
6. Takuya Niimi, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Permittivity Estimation Method for Double-layered Dielectric Object for UWB Radars," 2014 International Symposium on Antennas and Propagation (ISAP2014), Kaohsiung, Taiwan, Dec., 2014.
7. Shouhei Ohno, **Shouhei Kidera**, Tetsuo Kirimoto, "Novel Feature Extraction Method of Full Polarimetric SAR imagery for Automatic Target Recognition", International Conference on Space, Aeronautical and Navigation Electronics (ICSANE) 2014, Mareka, Malaysia, 22-24, October, 2014.
8. Ayumi Yamaryo, **Shouhei Kidera**, Tetsuo Kirimoto, "3-dimensional imaging method exploiting full polarimetric data for UWB short range radar", International Conference on Space, Aeronautical and Navigation Electronics (ICSANE) 2014, Mareka, Malaysia, 22-24, October, 2014.

<sup>1</sup>The names of students directly supervised by Dr. S. Kidera are underlined.

<sup>2</sup>First author is presenting author.

9. Takayuki Masuo, **Shouhei Kidera**, Tetsuo Kirimoto, Hiroshi SAKAMAKI, and Nobuhiro SUZUKI "Accurate Wind Velocity Estimation Method with Single Doppler LIDAR Model", International Conference on Space, Aeronautical and Navigation Electronics (ICSANE) 2014, Mareka, Malaysia, 22-24, October, 2014.
10. Shouhei Oono, **Shouhei Kidera**, Tetsuo Kirimoto, "Efficient Automatic Target Recognition Method for SAR Image Using Supervised SOM Based Classification," 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR), Tsukuba, Japan, September, 2013.
11. Ayumi Yamaryo, **Shouhei Kidera**, Tetsuo Kirimoto, "Extended Imaging Method Using Range Points Based Ellipse Extrapolation with Double Scattered Waves for UWB radars," 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR), Tsukuba, Japan, September, 2013.
12. Ryunosuke Souma, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Permittivity Estimation Method for 3-dimensional Dielectric Object with Iterative Correction of Waveform Deformation," 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR), Tsukuba, Japan, September, 2013.
13. Ryo Nakamata, **Shouhei Kidera**, Tetsuo Kirimoto, "EXPERIMENTAL STUDY ON ACCURATE HEIGHT CHANGE ESTIMATION METHOD BASED ON PHASE INTERFEROMETRY OF BAND-DIVIDED SAR IMAGES," 2013 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2013, Melbourne, Australia, September, 2013.
14. Yoshihiro Niwa, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Image Expansion Method for Target Buried in Dielectric Medium Using Multi-static UWB Radar," 2012 International Symposium on Antennas and Propagation (ISAP2012), Japan, Oct, 2012.
15. **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate and Robust Automatic Target Recognition Method for SAR Imagery with SOM-Based Classification", International Conference on Space, Aeronautical and Navigation Electronics 2012, International Symposium on Remote Sensing 2012, Incheon, Korea, 10-12, October, 2012.
16. Ryo Yamaguchi, **Shouhei Kidera** and Tetsuo Kirimoto, "NON-PARAMETRIC IMAGING METHOD FOR MULTIPLE MOVING TARGETS WITH MULTI-STATIC UWB RADAR", International Conference on Space, Aeronautical and Navigation Electronics 2012, International Symposium on Remote Sensing 2012, Korea, October, 2012.
17. Ryo Nakamata, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Height Change Estimation Method Based on Phase Interferometry of Band-divided SAR Images", International Conference on Space, Aeronautical and Navigation Electronics 2012, International Symposium on Remote Sensing 2012, Korea, 10-12, October, 2012.
18. **Shouhei Kidera** and Tetsuo Kirimoto, "Efficient 3-Dimensional Imaging Algorithm Using PI Extraction Based RPM for Quasi-Far Field UWB Radars", 2012 IEEE International Conference on Ultra-Wideband ICUWB 2012, Syracuse, New York, U.S.A, 17-20 Sep., 2012.
19. Ryo Yamaguchi, **Shouhei Kidera** and Tetsuo Kirimoto, "Nonparametric and Accurate Imaging Algorithm for a Target with Arbitrary Motion Using Multi-static UWB Radar", 2012 IEEE International Conference on Ultra-Wideband ICUWB 2012, U.S.A, Sep., 2012.
20. Ryunosuke Souma, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Permittivity Estimation Algorithm by Compensating Waveform Deformation for UWB Internal Imaging Radar", 2012 IEEE International Conference on Ultra-Wideband ICUWB 2012, U.S.A, Sep., 2012.
21. Yoshihiro Niwa, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Internal Imaging Method Using Extended RPM to Multi-static UWB Radar," International Workshop on Modern Science and Technology 2012 (IWMST 2012), Tokyo, Japan, Aug, 2012.
22. Ryo Nakamata, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate Height Change Estimation Method Using Phase Interferometry of Band-divided SAR Images," International Workshop on Modern Science and Technology 2012 (IWMST 2012), Tokyo, Japan, Aug, 2012.
23. Shunsuke Koumori, **Shouhei Kidera**, Tetsuo Kirimoto, "Efficient Signal Separation Method Using Independent Component Analysis with Data Length Optimization", International Workshop on Modern Science and Technology 2012 (IWMST 2012), Tokyo, Japan, Aug, 2012.
24. **Shouhei Kidera** and Tetsuo Kirimoto, "Experimental Study on Accurate 3-Dimensional Imaging Method Based on Extended RPM for Rotating Target", 2012 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2012, Munich, Germany, 22-27 Jul., 2012.
25. **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Shadow Region Imaging Algorithm Based on Doubly Scattered Range Points Migration for UWB Radars", International Symposium on Antennas and Propagation, ISAP 2011, Jeju, Korea, 25-28th, Oct., 2011.
26. **Shouhei Kidera**, Hiroyuki Yamada and Tetsuo Kirimoto, "Accurate 3-Dimensional Image Reconstruction Algorithm Extending RPM Method to ISAR Model", Asia-Pacific International Conference on Synthetic Aperture Radar (APSAR) 2011, Seoul, Korea, 26-30th, Sep., 2011.
27. Ryunosuke Souma, **Shouhei Kidera** and Tetsuo Kirimoto, "Fast and Accurate Permittivity Estimation Algorithm for UWB Internal Imaging Radar", Asia-Pacific International Conference on Synthetic Aperture Radar (APSAR) 2011, Seoul, Korea, 26-30th, Sep., 2011.

28. Ryo Yamaguchi, **Shouhei Kidera** and Tetsuo Kirimoto, "Nonparametric UWB Radar Imaging Algorithm for Moving Target Using Multi-static RPM Approach", Asia-Pacific International Conference on Synthetic Aperture Radar (APSAR) 2011, Seoul, Korea, 26-30th, Sep., 2011.
29. Tetsuhiro Okano, **Shouhei Kidera** and Tetsuo Kirimoto, "ICA-Based Super Resolution Pulse Compression Algorithm Incorporated by MUSIC Algorithm", Asia-Pacific International Conference on Synthetic Aperture Radar (APSAR) 2011, Seoul, Korea, 26-30th, Sep., 2011.
30. **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate 3-dimensional Image Expansion Algorithm Using Range Derivative of Double Scattered Signals for UWB Radars", The XXX General Assembly and Scientific Symposium of the International Union of Radio Science (URSI), Istanbul, Turkey, 13-20 Aug, 2011.
31. Yoriaki Abe, **Shouhei Kidera** and Tetsuo Kirimoto, "Accurate Shadow Region Imaging Algorithm Using Ellipse Extrapolation Based on Distorted Hyperbola Fitting for UWB Radars", The XXX General Assembly and Scientific Symposium of the International Union of Radio Science (URSI), Istanbul, Turkey, 13-20 Aug, 2011.
32. Ken Akune, **Shouhei Kidera** and Tetsuo Kirimoto, "Fast and Accurate Imaging Algorithm for Targets Buried in Dielectric Medium for UWB Radars", The XXX General Assembly and Scientific Symposium of the International Union of Radio Science (URSI), Istanbul, Turkey, 13-20 Aug, 2011.
33. **Shouhei Kidera** and Tetsuo Kirimoto, "Fast and Accurate Shadow Region Imaging Algorithm using Range Derivatives of Doubly Scattered Signals for UWB Radars", 2011 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2011, Sendai, Japan, 1-5 Aug, 2011.
34. **Shouhei Kidera** and Tetsuo Kirimoto, "Super-resolution UWB Radar Imaging Algorithm based on Frequency Domain Interferometer," International Workshop on Modern Science and Technology 2010 (IWMST 2010), Kitami, Japan, Sep, 2010.
35. Ken Akune, **Shouhei Kidera**, Tetsuo Kirimoto, "Acceleration for Shadow Region Imaging Algorithm with Multiple Scattered Waves for UWB Radars," International Workshop on Modern Science and Technology 2010 (IWMST 2010), Kitami, Japan, Sep, 2010.
36. Yoriaki Abe, **Shouhei Kidera**, Tetsuo Kirimoto, "Accurate UWB Radar Imaging Algorithm Using Curvilinear Scanning of Antenna," International Workshop on Modern Science and Technology 2010 (IWMST 2010), Kitami, Sep, 2010.
37. Tetsuhiro Okano, **Shouhei Kidera**, Tetsuo Kirimoto, "ICA Algorithm with Likelihood Criterion to Separate Mixtures of Complex Sinusoidal Signals," International Workshop on Modern Science and Technology 2010 (IWMST 2010), Kitami, Japan, Sep, 2010.
38. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Experimental Study on Super-Resolution 3-D Imaging Algorithm Based on Extended Capon with Reference Signal Optimization for UWB Radars", URSI Commission B, EMTS, International Symposium on Electromagnetic Theory, EMTS 2010, Berlin, Germany, August 16-19, 2010.
39. Takehiro Hoshino, **Shouhei Kidera**, Tetsuo Kirimoto, "Coherent Change Detection with Complex Logarithm Transformation on SAR Imagery," The Society of Instrument and Control Engineers, Annual Conference 2010 (SICE 2010), Taipei, Taiwan, Aug., 2010.
40. **Shouhei Kidera**, "Shadow Region Imaging Algorithm Using Array Antenna Based on Aperture Synthesis of Multiple Scattered Waves for UWB Radars", 2010 IEEE Geoscience and Remote Sensing Symposium, IGARSS 2010, Honolulu, Hawaii, USA, 25-30 July, 2010.
41. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Super-Resolution UWB Radar Imaging Algorithm based on Extended Capon with Reference Signal Optimization", European Conference on Antennas and Propagation 2010, EuCAP2010, Barcelona, Spain, 12-16 April, 2010.
42. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Experimental Study of Shadow Region Imaging Algorithm with Multiple Scattered Waves for UWB Radars", Progress in Electromagnetics Research Symposium (PIERS), Moscow Technical University of Radio Engineering, Electronics and Automatics, Moscow, Russia, Aug., 2009.
43. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "Shadow Region Imaging Algorithm with Aperture Synthesis of Multiple Scattered Waves for UWB Pulse Radars," The 2009 IEEE International Symposium on Antenna and Propagation and USNC/URSI National Radio Science meeting, Charleston, South Carolina, USA, 1-5 Jun, 2009.
44. Kenshi Saho, Tomoki Kimura, **Shouhei Kidera**, Hirofumi Taki, Takuya Sakamoto and Toru Sato, "Experimental study of robust and high-resolution ultrasound imaging algorithm with adaptive smoothing techniques," Workshop for Space, Aeronautical and Navigational Electronic, Ba-Da-Guan Hotel (TBD), Qingdao, P.R. China, Nov. 23-27, 2008.
45. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "An Experimental Study of High-Resolution 3-D Imaging Algorithm with Envelope of Modified Spheres for UWB Through-the-Wall Radars," International Symposium on Antennas and Propagation 2008 (ISAP 08), Taipei International Convention Center (TICC), Taipei, Taiwan, 27-30 Oct, 2008.
46. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "High-Speed UWB Radar Imaging Algorithm for Complex Target Boundary without Wavefront Connections," The XXIX General Assembly of the International Union of Radio Science (URSI), Hyatt Regency Chicago Hotel in Chicago, Illinois, USA, 7-16 Aug, 2008.



47. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "High-Resolution 3-D Imaging Algorithm without Derivative Operations for UWB Through-the-Wall Radars," IEEE International Symposium on Antenna and Propagation and the 2008 USNC/URSI National Radio Science meeting, IF216.9, San Diego, 5-12 Jul, 2008.
48. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "High-resolution and fast 3-D imaging algorithm with spectrum shift for UWB pulse radars," 2nd European Conference on Antenna and Propagation (EuCAP2007), Edinburgh, United Kingdom, 11-16 Nov. 2007.
49. **Shouhei Kidera**, Yusuke Kani, Takuya Sakamoto and Toru Sato, "An experimental study for a high-resolution 3-D imaging algorithm with linear array for UWB radars," 2007 IEEE International Conference on Ultra-WideBand (ICUWB2007), Marina Mandarin Hotel, Singapore, Sep. 2007. (Best Student Paper Award)
50. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A robust and fast 3-D imaging algorithm without derivative operations for UWB radars," EMTS2007, International URSI Commission B Electromagnetic Theory Symposium, paper no. EMTS084, Ottawa, ON, Canada, 26-28 Jul. 2007.
51. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A High-resolution Imaging Algorithm without Derivatives based on Waveform Estimation for UWB Pulse Radars," IEEE AP-S International Symposium, Honolulu, Hawai'i, USA. Jun. 2007.
52. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A Robust and Fast Imaging Algorithm without derivative operations for UWB Pulse Radars," European Conference on Antennas & Propagation (EuCAP) 2006, paper no.314368, Nice, France, Nov. 2006.
53. Takuya Sakamoto, **Shouhei Kidera**, Toru Sato, Satoshi Sugino, "An Edge-Preserving Stabilization for a Fast 3-D Imaging Algorithm with a UWB Pulse Radar" European Conference on Antennas & Propagation (EuCAP) 2006, paper no. 306687, Nice, France, Nov. 2006.
54. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A Robust and Fast Imaging Algorithm with an Envelope of Circles for UWB Pulse Radars," Progress in Electromagnetics Research Symposium (PIERS), Chuo University, Tokyo, Aug., 2006.
55. **Shouhei Kidera**, Takuya Sakamoto, and Toru Sato, "A High-resolution 3-D Imaging Algorithm with Linear Array Antennas for UWB Pulse Radar Systems," IEEE AP-S International Symposium, USNC/URSI National Radio Science Meeting, AMEREM Meeting, pp.1057-1060, Albuquerque, New Mexico, USA, July, 2006.
56. Takuya Sakamoto, **Shouhei Kidera**, Toru Sato, Tomohiko Mitani, and Satoshi Sugino, "An Experimental Study on a Fast and Accurate 3-D Imaging Algorithm for UWB Pulse Radar Systems," XXVIIIth General Assembly of International Union of Radio Science (URSI), F05.7, New Delhi, India, Oct., 2005.
57. Takuya Sakamoto, **Shouhei Kidera**, Toru Sato, Tomohiko Mitani, Satoshi Sugino, "An experimental study on a fast imaging algorithm for UWB pulse radar systems," Proc. 2005 IEEE AP-S International Symposium and USNC/URSI National Radio Science Meeting, Washington D.C., USA, P24.5, July, 2005.
58. **Shouhei Kidera**, Takuya Sakamoto and Toru Sato, "A high-resolution imaging algorithm based on scattered waveform estimation for UWB pulse radar systems," Proc. 2005 IEEE International Geoscience and Remote Sensing Symposium, pp. 1725-1728, Seoul, Korea, July, 2005.

## Scientific Research Grant

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1. S. Kidera (Co-PI 30%) and T. Kirimoto (PI 70 %) **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for Scientific Research, Scientific Research (B)**, “Research for Image Expansion Method using Polarimetric and Multiple Scattering Signals for UWB Short Range Radar”, Grant amount: 15.0 Million JPY (About \$ 150,000), Apr. 2015 - Mar. 2018.
2. S. Kidera (PI 100%), **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for Scientific Research, Grant-in-Aid for Young Scientists (A)**, “Research for Super-resolution Internal Imaging for UWB sensor”, Grant amount: 17.9 Million JPY (About \$ 179,000), Apr. 2014 - Mar. 2017.
3. S. Kidera (Affiliation PI 100%), **Ministry of Internal Affairs and Communications**, “Development for 140 GHz Short Range Radar” Grant amount: 22.80 Million JPY (About \$ 22,800), Sep. 2014 - Mar. 2017.
4. S. Kidera (PI 100%), **Japan Prize Foundation**, “Research for Innovative Super-resolution Internal Imaging Method for UWB Radar” Grant amount: 1.0 Million JPY (About \$ 10,000), Sep. 2013 - Mar. 2014.
5. S. Kidera (PI 100%), **Strategic Information and Communications R&D Promotion Programme(SCOPE) Phase I, Ministry of Internal Affairs and Communications**, “Development of Super-resolution Imaging Method for Non-invasive and Non-destruction UWB Radar” Grant amount: 2.89 Million JPY (About \$ 28,900), Sep. 2013 - Mar. 2014.
6. S. Kidera (PI 100%), **The Murata Science Foundation**, “Development of Super-resolution and Shadow Region Imaging for UWB Radar” Grant amount: 1.9 Million JPY (About \$ 19,000), July. 2013 - June. 2014.
7. S. Kidera (PI 100%), **The Support Center for Advanced Telecommunications Technology Research, Foundation (SCAT)**, “Development of Far Field and Shadow Region Imaging for UWB Radar” Grant amount: 2.5 Million JPY (About \$ 25,000), Apr. 2013 - Mar. 2014.
8. S. Kidera (PI 100%), **Ozawa Yoshikawa Memorial Foundation for Electronics**, “Development of Super-resolution Non-invasive Human Body Imaging Method for UWB Radar”, Grant amount: 3.0 Million JPY (About \$ 30,000), Apr. 2013 - Mar. 2014.
9. S. Kidera (PI 100%), **The KDDI Foundation**, “Research for Super-resolution Non-invasive Imaging Method Beyond Wavelength for UWB Radar”, Grant amount: 2.8 Million JPY (About \$ 28,000), Apr. 2013 - Mar. 2015.
10. S. Kidera (PI 100%), **Yazaki Memorial Foundation for Science and Technology**, “Super-resolution 3-D Imaging Method for UWB Radar”, Grant amount : 1.0 Million JPY (About \$ 10,000), Apr. 2013 - Mar. 2014.
11. S. Kidera (PI 100%), **Tateishi Science And Technology Foundation** “Research for Super-resolution UWB Sensor for Dielectric Medium Using Multiple Scattering Signals”, Grant amount: 2.1 Million JPY (About \$ 21,000), Apr. 2012 - Mar. 2013.
12. S. Kidera (PI 100%), **The Kurata Memorial Hitachi Science and Technology Foundation**, “Research for Super-resolution Imaging Method for Buried Object in Dielectric Medium Using Multiple Scattering Signal”, Grant amount: 1.2 Million JPY (About \$ 12,000), Apr. 2012 - Mar. 2013.
13. S. Kidera (PI 100%), **The Sumitomo Electric Group Basic**, “Research for Super-resolution and Quasi-Near Field UWB Radar Imaging Technique Under Narrower Observation Region”, Grant amount: 0.9 Million JPY (About \$ 9,000), Apr. 2012 - Mar. 2013.
14. S. Kidera (PI 100%), **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for Scientific Research, Grant-in-Aid for Young Scientists (B)**, “Research for Quasi-Near Field and Super-resolution Radar Sensor for Autonomous Robot”, Grant amount: 4.5 Million JPY (About \$ 45,000), Apr. 2012 - Mar. 2013.
15. S. Kidera (PI 100%), **TEPCO Memorial Foundation, Research Grant (Basic Research)** “Research for Super-resolution Internal Imaging Method for Dielectric Object for UWB Radar”, Grant amount: 10.0 Million JPY (About \$ 100,000), Apr. 2011 - Mar. 2014.
16. S. Kidera (PI 100%), **The Nakajima Foundation**, “Research for Super-resolution Internal Radar Sensor Using Frequency Domain Interferometry of UWB Signal”, Grant amount: 3.0 Million JPY (About \$ 30,000), Apr. 2011 - Mar. 2012.
17. S. Kidera (PI 100%), **The Casio Scientific Foundation**, “Research for High-resolution Imaging Method for Indoor Measurement and Target Recognition”, Grant amount: 1.0 Million JPY (About \$ 10,000), Apr. 2011 - Mar. 2012.
18. S. Kidera (Co-PI 30%) and T. Kirimoto (PI 70 %) **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for Scientific Research, Scientific Research (B)**, “Research for Super-resolution Radar Technique Using Multiple Scattering Environment for Collision Avoidance Robot”, Grant amount: 14.4 Million JPY (About \$ 144,000), Apr. 2010 - Mar. 2013.
19. S. Kidera (PI 100%), **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for Scientific Research, Research Activity Start-up**, “Pioneering Research for Super-resolution UWB Radar Technique”, Grant amount: 2.7 Million JPY (About \$ 27,000), Apr. 2009 - Mar. 2011.
20. S. Kidera (PI 100%), **Japan Society for the Promotion of Science (JSPS), Grants-in-Aid for JSPS Fellow**, “Research for Fast and High-resolution Target Shape Estimation Method for UWB Pulse Radar”, Grant amount: 1.8 Million JPY (About \$ 18,000), Apr. 2007 - Mar. 2009.

# Teaching Activity

## Graduate Courses

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Basic Theory for Control System Design (MATLAB Programming, Adaptive Array Signal Processing): Spring 2010, 2011, 2012, 2013, Fall 2010, 2011, 2012, 2013

Advanced Bioelectromagnetics: 2014,2015

## Undergraduate Courses

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Electronics Experiment (Digital Circuit): Fall 2009

Electronics Experiment (Inverted Pendulum Control): Fall 2011

Basic Scientific Experiment (Electrical Circuit, Photoelectric effect): Spring 2010, 2011, Fall 2012, 2013

Intelligent Mechanical Engineering Experiment (Logic Circuit): Spring 2012, 2013, Fall 2012, 2013

Measurement Engineering: 2014,2015

## Student Supervised

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### M.E. Degrees Completed

Ayumi Yamaryo, M.E., "Accurate Image Extrapolation Method Using Full Polarimetric Data Learning for UWB Short Range Radar", Mar. 2015 (Student Commendation in UEC)

Takuya Niimi, M.E., "Accurate Dielectric Constant Estimation for Double Layered Medium with Extended Envelope Method", Mar. 2015 (Student Commendation in UEC)

Yoshihiro Niwa, M.E., "Experimental Study on Accurate Dielectric Constant Estimation Incorporating RPM and FDTD Method for UWB Internal Imaging Radar", Mar. 2014

Ryunosuke Souma, M.E., "Accurate Permittivity Estimation Method Using Waveform Compensation with FDTD for UWB Internal Imaging Technique", Mar. 2013 (Student Commendation in UEC)

Ryo Yamaguchi, M.E., "Moving Target Imaging Method Using Multi-static Observation Model for UWB Radars", Mar. 2013 (Me-guro Award in UEC)

Yoriaki Abe, M.E. "Accurate Image Expansion Method Using Range Points Based Ellipse Fitting for UWB Radars", Mar. 2012 (Student Commendation in UEC)

Ken Akune, M.E., "Accurate Imaging Method for Object Buried in Dielectric Medium by Advanced RPM Method", Mar. 2012 (Student Commendation in UEC)

### B.E Degrees Completed

Ikki Kishida, B.E., "Parametric Dielectric Constant Estimation for UWB Internal Imaging Radar", Mar. 2015

Takaya Taniguchi, B.E., "Ellipse Based Extrapolation Method for UWB Through The Wall Imaging Radar", Mar. 2014

Toshiki Manaka, B.E., "Experimental Study on Accurate Dielectric Constant Estimation Method for UWB Internal Imaging Radar", Mar. 2014

Takuya Niimi, B.E., "Accurate Permittivity Estimation Method Using Reflection Echo from Internal Object for UWB Radar", Mar. 2013

Ayumi Yamaryo, B.E., "Image Expansion Method Using Multiple Scattering Signal for UWB Indoor Sensing", Mar. 2013

Yoshihiro Niwa, B.E., "Accurate Image Expansion Method by Multi-static Observation Model for UWB Internal Radar", Mar. 2012

Yusuke Harano, B.E., "Accuracy Enhancement for UWB Radar Image Using Phase Discrimination of Capon Output", Mar. 2012

Ryunosuke Souma, B.E., "Permittivity Estimation Method for UWB Internal Imaging Technique", Mar. 2011

Ryo Yamaguchi, B.E., "Moving Target Estimation Method Using Multi-static Observation for UWB Indoor Sensor", Mar. 2011

Kenta Shigeno, B.E., "Super-Resolution TOA Estimation Method Using Independent Component Analysis for UWB Imaging Radar", Mar. 2011

Yoriaki Abe, B.E., “Omni-directional Imaging Method with Arbitrary Scanning Orbit for UWB Robotic Sensor”, Mar. 2010

Ken Akune, B.E., “Acceleration for Shadow Region Imaging using Multiple Scattering Waves for UWB Radar”, Mar. 2010

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