

# Prof. Lars M. H. Ulander CURRICULUM VITAE (May 2014)

## 1. PERSONAL BACKGROUND

### 1.1 Personal Data

Birth Place: Växjö, Sweden

Birth Date: December 5th, 1962

### 1.2 Affiliation

Professor in Radar Remote Sensing  
Department Earth and Space Sciences  
Chalmers University of Technology  
SE-412 96 Gothenburg, Sweden

Director of Research, Radar Systems  
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### 1.3 Education

*Ph.D.*, Electrical and Computer Engineering, Chalmers University of Technology, 1991, Thesis Title: "Radar Remote Sensing of Sea Ice: Measurements and Theory"

*Lic.Eng.*, Electrical and Computer Engineering, Chalmers University of Technology, 1987, Thesis Title: "Active Microwave Remote Sensing for Sea Ice Parameters"

*M.Sc.*, Engineering Physics, Chalmers University of Technology, 1985, Thesis Title: "Airborne Radar Altimetry over the Greenland Ice Sheet"

### 1.4 Professional Expertise

Dr. Ulander's professional expertise encompasses radar science and technology, including synthetic-aperture radar (SAR), signal processing, calibration, interferometry, electromagnetic scattering and various applications of radar data. His experience includes lecturing, supervising Ph.D. students, and project management. His work in the research area of ultra-wideband UHF- and VHF-band SAR is internationally recognised.

### 1.5 Scientific Work and Experience

2014-present Professor at Chalmers University of Technology

2001-present Director of Research at Swedish Defence Research Agency (FOI).

1999-2014 Adjunct Professor at Chalmers University of Technology

1995-2000 Senior Scientist at FOI; Assistant Professor at Chalmers

1991-1992 Research Associate at Chalmers.

1989-1990 Visiting Fellow of the Canada Centre for Remote Sensing (CCRS), Ottawa.

1985-1991 Ph.D. student in Radar Remote Sensing.

1984-1985 M.Sc. student at Imperial College and University College London.

## 1.6 Patents

- Holder of five patents

## 1.7 Contributions, Scientific Honors

### *Scientific reviewer:*

- IEEE Trans. Geoscience and Remote Sensing, Geoscience and Remote Sensing Letters, Remote sensing of the Environment, Int. J. Remote Sensing, IEEE Trans. Aerospace Electronic Systems, IEE Proceedings-F, Electronics Letters, Journal Geophysical Research, EARSeL Advances in Remote Sensing, Canadian Journal of Remote Sensing, IEEE Trans. Signal Processing, J. Electromagnetic Wave Propagation and Applications

### *Committees:*

- Member of ESA's BIOMASS Mission Advisory Group through phase 0, A, B1
- Adjunct Member of SNRV-F (Swedish Chapter of URSI Commission F)
- Past member of Swedish Remote Sensing Committee (2002-2011)
- Past member of CEOS SAR Calibration group, ESA Fringe group, ESA Calibration group
- Member of numerous conference technical committees and special sessions

## 1.8 Supervision of Graduate Students

Examiner and/or Main Supervisor (Chalmers): P.-O. Frörlind, Ph.D., 2005, B. Hallberg, Ph.D., 2007, K. Folkesson, Ph.D., 2008, A. Wyholt, Lic.Eng., 2008, G. Sandberg, Ph.D., 2013, G. Carvajal, Ph.D., 2013, A. Berg, Ph.D., 2014, M. Soja, Lic.Eng., 2012, J. Torgrimsson, Lic.Eng., 2013, Erik Blomberg

Assisting supervisor (Chalmers): A. Carlström, Ph.D., 1995, J. Hagberg, Lic.Eng., 1994, M. Pettersson, Ph.D., 2000, P. Dammert, Ph.D., 1999, G. Smith-Jonforsen, Ph.D., 2000

## 2. PUBLICATIONS

Dr. Ulander is the author or co-author of more than 300 professional publications of which more than 55 are peer-reviewed journal papers. h-index (Web of knowledge; 7 May 2014): 21

### 2.1 Ten selected Scientific Journal Papers during the last five years (2010-2014)

- [1] M. Santoro, J.E.S. Fransson, L.E.B. Eriksson, and L.M.H. Ulander, Clear-cut detection in Swedish boreal forest using multi-temporal ALOS PALSAR backscatter data, J-STARS, 3 (4), pp. 618-631, 2010
- [2] T. Le Toan, S. Quegan, M.W.J. Davidson, H. Balzter, P. Paillou, K. Papathanassiou, S. Plummer, F. Rocca, S. Saatchi, H. Shugart, L. Ulander, The BIOMASS mission: Mapping global forest biomass to better understand the terrestrial carbon cycle, Remote Sensing of the Environment, Vol. 115, pp. 2850-2860, 2011
- [3] G. Sandberg, L.M.H. Ulander, J. Holmgren, J.E.S. Fransson, and T. Le Toan, L- and P-band backscatter intensity for biomass retrieval in hemiboreal forest, Remote Sensing of the Environment, Vol. 115, pp. 2874-2886, 2011
- [4] L.M.H. Ulander, B. Flood, P.-O. Frörlind, A. Gustavsson, T. Jonsson, B. Larsson, M. Lundberg, D. Murdin, and G. Stenström, Change detection of vehicle-sized targets in forest concealment using VHF- and UHF-band SAR, IEEE Aerospace and Electronic Systems Magazine, vol. 26, no. 7, pp. 30-36, July 2011

- [5] M. Neumann, S.S. Saatchi, L.M.H. Ulander, and J.E.S. Fransson, Assessing Performance of L-band and P-band Polarimetric Interferometric SAR Data in Estimating Boreal Forest Aboveground Biomass, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 50, no. 3, pp. 714-726, 2012
- [6] S. Saatchi, L. Ulander, M. Williams, S. Quegan, T. LeToan, H. Shugart, and J. Chave, Forest biomass and the science of inventory from space, *Nature Climate Change*, vol. 2, pp. 826-827, 2012
- [7] M.J. Soja, G. Sandberg, G., and L.M.H. Ulander, Biomass Retrieval for Boreal Forests in Sloping Terrain using P-band SAR Backscatter, *IEEE Trans. Geosci. Remote Sensing*, vol. 51, no. 5, pp. 2646-2665, 2013
- [8] J.I.H. Askne, J.E.S. Fransson, M. Santoro, M.J. Soja, and L.M.H. Ulander, Model-based biomass estimation of a hemi-boreal forest from multitemporal TanDEM-X acquisitions, *Remote Sensing*, vol. 5, no. 11, pp. 5574-5597, 2013
- [9] G.K. Carvajal, L.E.B. Eriksson, and L.M.H. Ulander, Retrieval and Quality Assessment of Wind Velocity Vectors on the Ocean With C-Band SAR, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 52, no. 5, pp. 2519-2537, 2014
- [10] G. Sandberg, L.M.H. Ulander, J. Wallerman, J.E.S. Fransson, Measurements of Forest Biomass Change Using P-band SAR Backscatter, *IEEE Transactions on Geoscience and Remote Sensing*, in press