

Curriculum Vitae for Karl-Göran Karlsson

Name: Karl-Göran O. Karlsson

Date of birth: 29.04.1959

Place of birth: Falkenberg

Education:

09/1980-02/1984: Bachelor of Science in Physics at the Meteorological Institution of the University of Uppsala, Sweden.

12/2006: Ph. D. in Meteorology at Stockholm University. Thesis title: *The use of a satellite-derived cloud climatology for studying cloud-aerosol processes and the performance of regional cloud climate simulations.*

Thesis advisor: Prof. Erland Källèn.

Thesis work supported by SNSB through Research Grants 59/95, 113/96, 125/99 and 196/00.

Professional record:

03/1984-12/1985: Meteorologist, Dispersion Modelling, Climate Section, SMHI
Status: permanent position, half time + Meteorologist, Meteorological Forecasting, Forecasting Section, SMHI, Status: permanent position, half time

01/1986-12/1989: Research Scientist, Meteorological Remote Sensing, Research and Development Section, SMHI, Status: permanent position, half time +
Meteorologist, Meteorological Forecasting, Forecasting Section, SMHI
Status: permanent position, half time

Since 01/1990: Research Scientist, Meteorological Remote Sensing Section, Research and Development Department, SMHI. Status: permanent position, full time

Projects:

- EUMETSAT Climate Monitoring Satellite Application Facility project (CM-SAF)

Project member representing SMHI since November 1998.

January 2004-February 2012: CM SAF Work Package manager for Cloud studies (full time). Responsible for activities in the CM SAF Clouds group consisting of about seven scientists at SMHI, DWD (Germany) and KNMI (the Netherlands).

March 2013 until present: Responsible for CM SAF Clouds, Albedo and Radiation dataset from AVHRR data (CLARA-A).

- ESA-CLOUD-CCI project

October 2010-present: Responsible for work packages related to cloud product validation and AVHRR, MODIS, AATSR and MERIS calibration monitoring.

Publications (peer reviewed):

- Karlsson, K.-G., 2003: A ten-year cloud climatology over Scandinavia derived from NOAA AVHRR imagery. *Int. J. Climatol.*, **23**, 1023-1044.
- Dybbroe, A., A. Thoss and K.-G. Karlsson, 2005: NWCSAF AVHRR cloud detection and analysis using dynamic thresholds and radiative transfer modeling - Part I: Algorithm description, *J. Appl. Meteor.*, **44**, 39-54.
- Dybbroe, A., A. Thoss and K.-G. Karlsson, 2005: NWCSAF AVHRR cloud detection and analysis using dynamic thresholds and radiative transfer modeling - Part II: Tuning and validation, *J. Appl. Meteor.*, **44**, 55-71.
- Hedfors, J., A. Aldahan, A. Kulan, G. Possnert, K.-G. Karlsson and I. Vintersved, 2006: Clouds and ⁷Be; perusing connections between cosmic rays and climate. *J. Geophys. Res.*, **111**, No. D2, D02208, 10.1029/2005JD005903.
- Karlsson, K., U. Willén, C. Jones, and K. Wyser (2008), Evaluation of regional cloud climate simulations over Scandinavia using a 10-year NOAA Advanced Very High Resolution Radiometer cloud climatology, *J. Geophys. Res.*, **113**, D01203, doi:10.1029/2007JD008658.
- Schulz, J. et al. (24 named authors), 2009: Operational climate monitoring from space: The EUMETSAT Satellite Application Facility on Climate Monitoring (CM-SAF), *Atmos. Chem. Phys.*, **9**, 1687-1709.
- Reuter, M. W. Thomas, P. Albert, M. Lockhoff, R. Weber, K.-G. Karlsson and J. Fischer, 2009: The CM-SAF and FUB Cloud Detection Schemes for SEVIRI: Validation with Synoptic Data and Initial Comparison with MODIS and CALIPSO. *J. Appl. Meteor. Climatol.*, **48**, 301-316.
- Kaspar, F., R. Hollmann, M. Lockhoff, K.-G. Karlsson, A. Dybbroe, P. Fuchs, N. Selbach, D. Stein and J. Schulz, 2009: Operational generation of AVHRR-based cloud products for Europe and the Arctic at EUMETSAT's Satellite Application Facility on Climate Monitoring (CM-SAF), *Adv. Sci. Res.*, **3**, 45-51.
- Karlsson, K.-G., and A. Dybbroe, 2010: Evaluation of Arctic cloud products from the EUMETSAT Climate Monitoring Satellite Application Facility based on CALIPSO-CALIOP observations, *Atmos. Chem. Phys.*, **10**, 1789-1807.
- Devasthale, A., Willén, U., Karlsson, K.-G., and Jones, C. G, 2010.: Quantifying the clear-sky temperature inversion frequency and strength over the Arctic Ocean during summer and winter seasons from AIRS profiles, *Atmos. Chem. Phys.*, **10**, 5565-5572, doi:10.5194/acp-10-5565-2010.
- Devasthale, A., Tjernström, M., Karlsson, K.-G., Thomas, M. A., Jones, C. and co-authors. 2011. The vertical distribution of tropospheric thin features over the

Arctic analysed from CALIPSO observations. Part I – Optically thin clouds.
Tellus, **63B**, 77–85.

Devasthale, A., Karlsson, K.-G., Quaas, J., and Grassl, H., 2012: Correcting orbital drift signal in the time series of AVHRR derived convective cloud fraction using rotated empirical orthogonal function, *Atmos. Meas. Tech.*, *5*, 267-273, doi:10.5194/amt-5-267-2012.

Karlsson, K.-G., Riihelä, A., Müller, R., Meirink, J. F., Sedlar, J., Stengel, M., Lockhoff, M., Trentmann, J., Kaspar, F., Hollmann, R., and Wolters, E.: CLARA-A1: a cloud, albedo, and radiation dataset from 28 yr of global AVHRR data, *Atmos. Chem. Phys.*, *13*, 5351-5367, doi:10.5194/acp-13-5351-2013, 2013.

Karlsson, K.-G. and E. Johansson, 2013: On the optimal method for evaluating cloud products from passive satellite imagery using CALIPSO-CALIOP data: example investigating the CM SAF CLARA-A1 dataset. *Atmos. Meas. Tech.*, *6*, 1271–1286, www.atmos-meas-tech.net/6/1271/2013/ , doi:10.5194/amt-6-1271-2013.

Stengel, M., S. Mieruch, M. Jerg, K.G. Karlsson, R. Scheirer, B. Maddux, J.F. Meirink, C. Poulsen, R. Siddans, A. Walther and R. Hollmann, The Clouds Climate Change Initiative: Assessment of state-of-the-art cloud property retrieval schemes applied to AVHRR heritage measurements, *Remote Sens. Environ.*, doi:10.1016/j.rse.2013.10.035, 2013.

Karlsson, K.-G. and E. Johansson, 2014: Multi-Sensor Calibration Studies of AVHRR-Heritage Channel Radiances Using the Simultaneous Nadir Observation Approach, *Remote Sens.*, *6*(3), 1845-1862, doi:10.3390/rs6031845.

Karlsson, K.-G., E. Johansson and A. Devasthale, 2015: Advancing the uncertainty characterisation of cloud masking in passive satellite imagery: Probabilistic formulations for NOAA AVHRR data, *Rem. Sens. Env.* , *158*, 126-139; doi:10.1016/j.rse.2014.10.028.