

Curriculum Vitae

First name: Bin

Last name: Cheng

Gender: Male

Date of the CV: 21 February 2014

Date of birth: 17 September 1964

Place of birth: Beijing, China

Citizenship: Chinese

Current residence: Itäinen Rantatie 4 A2, 02230, Espoo, Finland

Education

14.06.2002: Ph.D (Degree of Doctor in Philosophy) in geophysics, Faculty of science, Department of physical science, University of Helsinki, Finland. (Dissertation: On the modelling of sea ice thermodynamics and air-ice coupling in the Bohai Sea and the Baltic Sea). <http://ethesis.helsinki.fi/julkaisut/mat/fysik/vk/cheng/>

11.06.1999: Ph.L. (Degree of Licentiate in Philosophy) in geophysics, Faculty of science, Department of geophysics, University of Helsinki, Finland. (Thesis entitled: Calculations of sea ice thermodynamics by an ice model coupled with the atmospheric boundary layer).

07.1987: B.Sc. in Computational Mathematics, Department of Mathematics, Jilin University, Changchun, China.

Other training

5 – 30.3.2003: Visiting scientist to the National Research Centre for Marine Environment Forecasts (NRCMEF), Beijing, China in context of polar research and Chinese National Arctic Research Expedition (CHINARE) preparation.

14.01 – 15.02.2003: Visiting scientist to the International Arctic Research Centre (IARC), Fairbanks, Alaska, USA on sea ice modelling research.

14.06.1993 – 20.06.1994: Visiting scientist to the Finnish Institute of Marine Research (FIMR) in context of Sino-Suomi bilateral collaboration on sea ice modelling and Ph.D education.

20.11 – 20.12.1990: Visiting scientist to the Far Eastern Hydro-meteorological Institute, Vladivostok, USSR on sea ice and storm surge research.

Linguistic skills

Chinese: mother tongue

English: fluent

Finnish: basic (completed first level Finnish language courses for foreign students at the University of Helsinki, 1999)

Current position and position with honour

01.01. 2011 – Senior scientist, Finnish Meteorological Institute (FMI)

10.2010 – Adjunct professor in the State Key Laboratory of Coastal and Offshore Engineering, Dalian University of Technology (DUT), China.

22.07.2006 – Guest professor, in Key Laboratory for Polar Science in Polar Research Institute of China (PRIC), State Oceanic Administration (SOA), China.

Previous work experience

01.01.2009 – 31.12.2010: Full time research scientist, FMI.

1.06.2002 – 31.12.2008: Full time research scientist, FIMR.

1.1.1997 – 31.5.2002: Full time research scientist/PhD student, FIMR

1.3.1996 – 31.12.1996: Part time research scientist/PhD student, FIMR

26.08.1995 – 29.2.1996: Full time research scientist/PhD student, FIMR.

1.7.1989 – 25.8.1995: Full time research scientist, NRCMEF.

1.8.1987 – 30.6.1989: Full time research assistance, NRCMEF.

Research funding as well as leadership and key role in research project

Leadership and funding in research work:

*2012 – 2015: 4 000 000 RMB, Cooperative study on application of multi-satellite remote sensing data for ship navigation in the Arctic Ocean, funded by the Chinese Ministry of Science and Technology (MoST). International partner, co-PI.

*2011 – 2014: 98 000 RMB, Ecological Response to rapid Changes of Sea Ice condition in the Arctic Ocean (ERCSI) funded by the MoST. International partner, co-PI.

*2009 – 2012: 445 000 NOK, Advancing Modelling and Observing solar Radiation of Arctic sea-ice – understanding changes and processes (AMORA), funded by the Research Council of Norway for Climate change - research cooperation with China. International partner, co-PI.

*Visiting scientist with applied funding:

- Finnish Academy research mobility programs 2006, 2008, 2010 and 2011, 2014
PRIC, 40 days, 2006
DUT, 35 days, 2008; 30 days, 2010; 30 days, 2011, 30 days, 2014
- Finnish Meteorological Institute visiting scientist in the context of the EUMETSAT, the Satellite Application Facilities (SAFs) on Climate Monitoring
3 months, 2006; 2 months, 2007; 2 months, 2008

Key role in national/international research projects:

2010 – The international research programme HIRLAM (High Resolution Limited Area Model) HIRLAM project: Implementation of snow /ice thermodynamic model into boundary parameterization scheme SURFEX.

*2010 – 2011, Experiment of producing ice thickness charts for the Gulf of St. Lawrence, funded by Environment Canada.

*2010 – 2013, Rapid Arctic Sea Ice Shrinking and its Effects on Climate (RAISE), key project funded by Natural Science Foundation of China , International partner.

*2009 – 2011, Sea ice and snow products for the Barents, Pechora and Kara Seas using multisensor satellite data (Kara_X), funded by the Finnish Technology Development Centre (TEKES).

*2006 – 2009, Sea ice thermodynamic modelling assessment for climate research in: Developing Arctic Modelling and Observing Capabilities for Long-term Environment Studies (DAMOCLES), <http://www.damocles-eu.org> funded by the European Commission (EC).

2005 – 2009, Sea ice thermodynamic modelling study in: Multi-polarization SAR for Operational Sea Ice Monitoring (POL-ICE), <http://www.space.hut.fi/research/project/pol-ice> funded by the Finnish Technology Development Centre (TEKES).

2004 – 2006, Data analysis and model validation in: ISPOL (Ice Station POLarstern), <http://www.ispol.de/index.html> partly funded by the Finnish Academy.

*2003 – CHINARE program: Snow and sea ice modelling and observations.

*2002 – 2005, Implementation of the FIMR operational sea ice model with development of ice ridging parameterisation in: Ice Ridging Information for Decision Making in Shipping Operations (IRIS), <http://www.hut.fi/Units/Ship/Research/Iris/Public/> funded by the European Commission (EC).

1997 – 1998, Development of a thermodynamic sea ice model and implementation of a sea ice dynamic model for routine forecasts in: The Sea Ice Modelling and Numerical Forecast of the Baltic Sea funded by the Finnish Ministry of Traffic and Communication.

*1994 – 1995, Implementation of Biosphere-Atmospheric Transfer Scheme (BATS) model for runoff study in: The Water and Energy Balance for Land Surface (funded by the National Natural Science Foundation of China).

1993 – 1994, Development sea ice operational model in Finnish Ice Service in: The Sea Ice Modelling of the Baltic Sea and the Bohai Sea (co-operation between FIMR and NRCMEF).

*1991 – 1995, Sea ice forecasts system and numerical model development in: Numerical Sea Ice Prediction (Objective Data Analysis and Data Assimilation) funded by “The 8th five-year National Scientific and Technical Project of China”.

*1988 – 1990, Development of sea ice dynamic-thermodynamic coupled model in: Numerical Sea Ice Prediction (Dynamic-Thermodynamic Sea Ice Model) funded by “The 7th five-year National Scientific and Technical Project of China”.

* Participation in the drafting of funding applications

Merits in teaching and pedagogical competence

Teaching assistance for course (MSc- and postgraduate level, half year): “turbulent flow” in Department of physical science, University of Helsinki, 2004

Lecturer for the sea ice summer school (22 – 29.8.2010), Shanghai hosted by the PRIC, SOA.

Lecturer for seminar series in DUT, 2008, 2010, 2011.

Lecturer for NUMLAB course (MSc- and postgraduate level, half year) in Department of physical science, University of Helsinki, 2011,

http://www.helsinki.fi/~jaraisan/numlab2011/numlab_report_2011.pdf

Collaborator for Ph. D dissertation theses: Mäkynen Marko (2007), Pirazzini Roberta (2008)

Co- Supervisor for Ph.D theses:

Jingxue Guo: Polar Research Institute of China (Ph.D completed 2008)

Reibo Lei: Dalian University of Technology (Ph.D completed 2009)

Yu Yang: Dalian University of Technology (Ph.D completed 2012)

Wenfeng Huang: Dalian University of Technology (Ph.D completed 2013)

Liqong Shi: Dalian University of Technology (Ph.D under work)

Qinghua Yang: Ocean University of China (Ph.D under work)

Awards, prizes and honours

SOA science and technology progress award (2nd) for numerical sea ice prediction, 1992.
 SOA science and technology progress award (1st) for numerical prediction method of storm surge, 1989.

Other academic merits

Experience in Field expeditions:

Leader of ice mass balance buoy (IMB) test for the Baltic Sea 2013, 2014

Leader of IMB for Arctic lake Orajärvi, Sodankylä experiments 2010, 2012, 2013 and 2014

Participant in the CHINARE-2008 expedition, 2008.

Participant in POL-ICE field campaign at Hailuoto Majaniemi, Baltic Sea. 2006/2007.

Participant in POL-ICE field campaign at Resolute Bay Canadian Arctic Archipelago 2006.

Participant in the CHINARE-2003 expedition, 2003.

Participant in BASIS (Baltic Air-Sea-Ice Study) winters expedition 1998 and 1999.

Participant in IMSI (integrated use of new Microwave satellite data for improved Sea Ice observation) winter expedition 1997.

Visiting scientist in OSIC (Operational Sea Ice Charting using ERS-1 SAR images) Baltic Sea ice expedition in 1994.

Field assistance in the Bohai Sea ice winter expedition 1989 and 1990.

Acting reviewer for scientific journals

- Journal of Glaciology
- Annals of Glaciology
- Journal of Geophysical Research- Oceans
- Polar Research
- Advanced Polar Research
- Tellus
- IEEE Transactions on Geoscience and Remote Sensing.

Scientific and societal impact of research

Total number of peer reviewed publications: 43. Other publications: 53.

H-index (according to Web of Science database): 8

Positions of trust in society and other societal merits

Geophysical Society of Finland: member since 2002; Finnish Ice Research Society: member since 2002; Chinese Society of Oceanography: member since 1991; Editorial

Advisory Board Member of the Open Geography Journal since 2007;

Guest member in steering group of the CHINARE program: 2003, 2008, and 2010.

Invited expert in steering group of the Chinese new icebreaker project, 2009 – 2016.

Major societal impact of the research: A developed high resolution thermodynamic snow and ice model (HIGHTSI) has been used for operational ice service in the FMI.