

## Curriculum Vitae

**Dr. phil. nat. Fred Kucharski**  
Via Salita di Gretta 4, 34136 Trieste  
Italy

### University Studies

October 1984 - May 1990 University of Kiel, Meteorology  
December 1986 Examination conferring an intermediate diploma  
May 1990 Diploma (Diplom) in Meteorology with the  
Thesis: 'Application of the variational data assimilation  
technique in a boundary-layer model'

### School Education

1978 - 1984 High School Brinkum (Germany)  
1984 School leaving examination (Abitur) (Germany)  
1976 - 1978 Orientierungsstufe Heiligenrode (Germany)  
1971 - 1976 Elementary School Heiligenrode

### Dissertation

(finished in November 1997) PhD Thesis: 'On the concept of exergy and available  
potential energy', Supervisor: Prof. Dr. F. Herbert,  
Institute of Meteorology and Geophysics,  
University of Frankfurt/Main (Germany)

### Research Experience

Since January 2001 Research Scientist in the Physics of  
Weather and Climate Group of the Earth System  
Physics Section at the Abdus Salam ICTP, Italy.  
The research comprises the investigation of global  
climate variability and predictability including  
phenomena such as the North Atlantic Oscillation,  
Sahel rainfall variability, ENSO, ENSO-South Asian  
Monsoon teleconnections and their changes,  
Northeast Brasil Rainfall from interannual to multi-decadal  
time scale. For this purpose global atmospheric general  
circulation models are developed and applied,  
and observational data is analyzed.

May 2000 - December 2000 Research Scientist at the Met.Office in Bracknell,  
UK, Numerical Weather Prediction Division,  
Unified Model Development Group, aim of research:  
Improving the numerical weather forecast with  
emphasis on impact of vertical resolution.

May 1998 - April 2000 Post-Doctoral Fellow with Prof. A. J. Thorpe  
at the Department of Meteorology, University  
of Reading, UK. Employed within the FASTEX-CSS  
Project. The research comprises the evaluation  
of analysis data and of numerical simulations  
in order to develop new dynamical models of  
cyclogenesis. As a tool a local energy concept  
(exergy) is used.

April 1996 - April 1998 Scientific assistant at the Institute of Hydrophysics (Prof. Dr. v. Storch), GKSS Research Center, Geesthacht (Germany), employed within the NEWBALTIC - Project (Prof. Dr. L. Bengtsson) in the field: 'Variational soil moisture assimilation'

January 1991 - March 1996 Scientific assistant at the Institute of Meteorology and Geophysics (Prof. F. Herbert), University of Frankfurt/Main (Germany), project works in cloud physics; Research activities in the field of atmospheric energetics.

June 1990 - December 1991 Scientific assistant at the Institute of Meteorology, GKSS Research Center (Dr. D. Eppel), Geesthacht (Germany), application of the variational method of data assimilation to a boundary-layer model.

**Teaching Experience**

Tutoring of theoretical meteorology at the University of Frankfurt/Main, Germany. Lecture course 'Waves in the Atmosphere and Oceans' at the Department of Meteorology, University of Reading, UK. Teaching 'Mathematical Methods in Geophysics' and Atmospheric Dynamics in the Diploma course in Earth System Physics Physics at ICTP. Tutoring in workshops and schools organized by the Physics of Weather and Climate Group at the ICTP, Italy. Since 2011 coordinator of the ICTP ESP diploma program.

**Organization of scientific events**

22-24 March 2007, ICTP, Trieste, Italy: Conference on Milankovitch cycles over the past 5 million years.

09-11 June 2008, ICTP, Trieste, Italy: Workshop on Reducing and Representing Uncertainties in High-Resolution Proxy Climate Data

17-20 November 2008, ICTP, Trieste, Italy: Conference on Teleconnections in the Atmosphere and Oceans.

Since 2009, co-organiser of the EGU session on Tropical Climate Variability and Teleconnections.

16-20 August 2010, ICTP, Trieste, Italy: Conference on Decadal Predictability.

18-22 July 2011, ICTP, Trieste, Italy: Workshop of Hierarchical modelling of climate.

Since 2010 co-organizer of the yearly Targeted Training Activity on Monsoons.

12-16 November 2012, ICTP, Italy: Workshop on Variability in the Western Tropical Pacific

21-30 October 2013, ICTP, Italy: School and Workshop on Weather Regimes and Weather Types in the Tropics and Extra-tropics

<b>Current and past Scientific Supervisory</b>	<p><i>Laura Zamboni</i>, School of Doctorate Environmental and Industrial Fluid Mechanics, thesis: 'Seasonal variability of precipitation over south eastern South America'</p> <p><i>Rondrotiana Barimala</i>, School of Doctorate Environmental and Industrial Fluid Mechanics, thesis: 'Interannual to decadal variability of dominant modes in the tropical Indian Ocean'.</p> <p><i>Faisal Saeed Syed</i>, Phd student, Stockholm University, thesis: 'Seasonal to Interannual climate Prediction for sustainable Development in Arid Regions'.</p> <p><i>Titike Kassa</i>, Phd student, Addis Abbaba, thesis: 'Large Scale Influences Interannual Variability, Physical Mechanisms, Potential Predictability and Prediction of Short Rains over East Africa'.</p> <p><i>Douglas Lindeman</i>, Phd student, Brazil, Paleoclimate simulations using Speedy-Nemo'.</p>
<b>Referee of Int. Scientific Journals</b>	Geophysical Research Letters, Journal of Geophysical Research, Climate Dynamics, Journal of Climate, Journal of Physical Oceanography, Nature Geoscience.
<b>Current Project Involvement</b>	ENSEMBLE-Based Predictions of Climate Changes and their Impacts (ENSEMBLES). European Union (EU), 2004-2009 Climate of the 20th Century (C20C) Project, CLIVAR, 2002-2012
<b>Skills</b>	Familiar with variational methods of data assimilation, atmospheric dynamics, atmosphere-ocean interactions, numerical atmospheric modelling and solving complex problems with the computer.
<b>Languages</b>	German (mother tongue), English (fluent), Italian (basic), French (basic)
<b>Computer Knowledge</b>	Computer languages: FORTRAN, FORTRAN90, IDL, HTML, MATLAB. Practice with Workstations, Supercomputer (CRAY: T3E, SGI:ORIGIN) and UNIX, practice with numerical simulation models.
<b>Personal Details</b>	
Date of Birth	21 January 1965
Nationality	German