# Curriculum Vitae

**Dr. phil. nat. Fred Kucharski**

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Italy

**University Studies**

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| 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**

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

**Dissertation**

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| (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**

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| 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. |

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| 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 prorgram.

**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 Traning 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

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

**Personal Details**

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| Date of Birth | 21 January 1965 |
| Nationality | German |

Trieste, June 04 , 2015