CURRICULUM VITAE ET STUDIORUM   Dr. Giovanni Conti

CONTACT INFORMATION	Via Sante Vincenzi, n. 47 40138 Bologna (BO) Italy	*Voice:* *E-mail:* giovanni.conti83@pec.it
	CMCC: Fondazione Centro Euro-Mediterraneo per i Cambiamenti Climatici, Viale Carlo Berti Pichat, 6/2, 40127 Bologna BO, Italy	*E-mail:* giovanni.conti@cmcc.it

PLACE, DATE OF BIRTH Parma (Italy), 31 July 1983

CITIZENSHIP Italian

RESEARCH INTERESTS Turbulence, Chaos, Complex System, Atmosphere and Ocean Physics, Climate Dynamics, Data Assimilation

EDUCATION

Ph. D.
CMCC: Centro Euro-Mediterraneo per i Cambiamenti Climatici, Bologna, Italy
and Universita Ca' Foscari, Venice, Italy

Sept. 2012 - 15th Feb. 2016

- *Thesis: "Path integral, Fokker-Planck equation and Transition Probability Matrices in Climate Dynamics"*

- Advisor: Dr. Antonio Navarra (CMCC)

From 19th September 2014 to 17th December 2014 this research activity was carried out in Boulder (CO), USA, at NCAR.

M. Sc. Theoretical Physics
Parma University, Parma, Italy
Department of Physics

started in the academic year 2007/2008 - final exam 17th Nov. 2011

- *M. Sc. Thesis:*
  "Extraction of the signal of gravitational waves with numerical simulations of the Einstein equations"
  Graduated 110/110 Magna Cum Laude

- Advisor: Prof. Roberto De Pietri (Parma University)

B. Sc. Physics
Parma University, Parma, Italy
Department of Physics

started in the academic year 2003/2004 - final exam 28th Feb. 2008

- *B. Sc. Thesis:*
  "XY-Model like a video game".
  Graduated 110/110

- Advisor: Prof. Francesco Di Renzo (Parma University)

Note: During the academic year 2002/2003, I have attended, and given, several exams of the courses
of Environmental Science,
Parma University, Parma, Italy
Department of Environmental Science (Cascina Ambolana)
After one year I changed the field of study to understand more in depth the nature using Physics.

Further
Education
(Curses, School,
Workshop)

International Conference on Geophysical and Astrophysical Vortex Interactions
University of St Andrews, Scotland, UK
June 11-14 2019

The 6th Bremen Winter School and Symposium "Dynamical systems and turbulence"
Universität Bremen, Germany
March 12-16 2018

Mathematics, waves and geophysical flow
Department of Mathematics of the University of Bremen, Bremen, Germany
15 Dec. - 16 Dec. 2017

Numerical Modeling, Predictability and Data Assimilation in Weather, Ocean and Climate. (A Symposium Honoring the Legacy of Anna Trevisan)
Bologna, Italy
17-20 October 2017

Workshop on "Geometric methods in geophysical fluid dynamics and climate modelin"
University of Hamburg, Germany
June 2017

The 5th Bremen Winter School and Symposium "Dynamical systems and fluids"
Universität Bremen, Germany
March 27-31 2017

DAMES conference
Hamburg, Germany
Sept. 2016

Introduction to Parallel Computing with MPI and OpenMP
CINECA,Casalecchio di Reno (Bo), Bologna, Italy
Dec. 2015

Introduction to modern Fortran
CINECA,Casalecchio di Reno (Bo), Bologna, Italy
Oct. 2015

MODES
NCAR, Mesa Lab, Boulder, CO, USA
26 Aug. 2015 - 28 Aug. 2015

Numerical Methods for Atmosphere and Ocean CMCC - Centro Euro-Mediterraneo per i Cambiamenti Climatici, Bologna, Parma, Italy
Prof. F. Mesinger
Apr. 2012 - June 2012

Parma Workshop on Numerical Relativity and Gravitational Waves
Parma, Italy
7 Sept. 2011 - 9 Sept. 2011

Professional
Experience

Postdoctoral researcher: CMCC (Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici),
Bologna, Italy   **1st January. 2020 - now**

Postdoctoral researcher: Universität Hamburg, Theoretical Oceanography,
Hamburg, Germany   **1st July. 2018 - 31st December 2019**

Postdoctoral researcher: Universität Hamburg, Theoretical Oceanography,
Hamburg, Germany   **1st July. 2016 - 30th June 2018**

Collaboration contract with CMCC (Centro Euro-Mediterraneo per i Cambiamenti Climatici), Bologna, Italy   **7th March 2016 - 31 May 2016**

Stage on ENSO variability at CMCC (Centro Euro-Mediterraneo per i Cambiamenti Climatici), Bologna, Italy   **1st Feb. 2012 - 31 Aug. 2012**

STUDENTS
SUPERVISION

M.Sc.,
Joshua Pein: *"Role of Lagrangian coherent structures in the transfer of passive tracers"*
August 2016 - May 2019

PUBLICATIONS

Journal Articles:

6. <u>Conti G.</u> and Badin G. (2020) *Statistical Measures and Selective Decay Principle for Generalized Euler Dynamics: Formulation and Application to the Formation of Strong Fronts*, J Stat Phys, doi:10.1007/s10955-019-02472-4

5. <u>Conti G.</u> and Badin G. (2019) *Velocity statistics for point vortices in the local α-models of turbulence*, Geophysical and Astrophysical Fluid Dynamics, doi: 10.1080/03091929.2019.1572750

4. <u>Conti G.</u> and Badin, G. (2017): *Hyperbolic Covariant Coherent Structures in Two Dimensional Flows*, Fluids, 2, 10.3390/fluids2040050

3. <u>Conti G.</u>, A. Navarra, and J. Tribbia (2017): *The ENSO transition probabilities*, Journal of Climate, 0, doi: 10.1175/JCLI-D-16-0490.1.

2. Navarra, A., J. Tribbia, <u>Conti G.</u> (2013): *Atmosphere - Ocean Interactions at Strong Couplings in a Simple Model of El Nino*, Journal of Climate, 26, 96339654. doi: 10.1175/JCLI-D-12-00763.1

1. Navarra A, Tribbia J, <u>Conti G.</u> (2013): *The Path Integral Formulation of Climate Dynamics*, PLoS ONE 8(6): e67022. doi:10.1371/journal.pone.0067022

Non Refereed Pub.

Proceeding of science:

F. Di Renzo, <u>G. Conti</u>, V. Anselmi. GPU computing for 2-d spin systems: CUDA vs OpenGL, arXiv:0811.2111v1, https://pos.sissa.it/066/024/pdf

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In preparation:
- Badin G. and <u>Conti G.</u> *Selective Casimir dissipation of the surface quasi-geostrophic equations: dynamics and application to singular scenario*

TALKS

"Velocity statistics for point vortices in the local α-models of turbulence"
International Conference on Geophysical and Astrophysical Vortex Interactions
University of St Andrews, Scotland, UK
June 11-14 2019

"Hyperbolic Covariant Coherent Structures in two dimensional flows"
TRR 181 Winter seminar
University of Hamburg, Germany
Nov. 30th 2017

"Hyperbolic Covariant Coherent Structures in two dimensional flows"
Workshop on "Geometric methods in geophysical fluid dynamics and climate modeling"
University of Hamburg, Germany
June 2017

"Path integral, Fokker-Planck equation and Transition Probability Matrices in Climate Dynamics"
DAMES conference
Hamburg, Germany
28th Sept. 2016

"Path integral, Fokker-Planck equation and Transition Probability Matrices in Climate Dynamics"
George Mason University - COLA, Fairfax, Virginia, USA
23rd May 2016

POSTERS

"Hyperbolic Covariant Coherent Structures in two dimensional flows"
Conti G. and Badin G.
The EGU General Assemby. Vienna, Austria, 8-13 April 2018

"Hyperbolic Covariant Coherent Structures in two dimensional flows"
Conti G. and Badin G.
Numerical Modeling, Predictability and Data Assimilation in Weather, Ocean and Climate. (A Symposium Honoring the Legacy of Anna Trevisan) Bologna, Italy, 17-20 October 2017

"Hyperbolic Covariant Coherent Structures in two dimensional flows"
Conti G. and Badin G.
The 5th Bremen Winter School and Symposium "Dynamical systems and fluids" Universität Bremen, Germany, March 27-31 2017

"On the Detection of Hyperbolic Coherent Structures using Covariant Lyapunov Vectors in 2D Flows"
Conti G. and Badin G.
Symposium "Mathematics, waves and geophysical flow" Universität Bremen, Germany, 15 Dec. - 16 Dec. 2016

REFEREE   Quarterly Journal of the Royal Meteorological Society (QJRMS)

COMPUTER SKILLS
- Languages: C++, C, Java, Fortran, Unix shell scripts (bash), MPI parallel processing library, CUDA, PHP, MYSQL and meta-languages like HTML with CSS. Basis of Android.
- Applications: Mathematica, Matlab, LaTeX, common Windows and Unix/Linux database, spreadsheet, and presentation software
- Operating Systems: Unix/Linux, Windows.

LANGUAGES   Italian (mother language)
English:
- reading: excellent
- writing: good
- conversation: good

German: I attended a basic course of German, A1, at the Goethe Institute, Hamburg, Germany.