



Guido Cioni

Curriculum Vitae

Education

2003–2008 **High School Diploma**, *Liceo Scientifico Ulisse Dini*, Pisa, *ISCED 3*.
Solid scientific preparation. Final thesis on the analysis of annual time series of weather data in Pisa (IT).
Final grade: 95/100

2008–2012 **B.Sc. Physics**, *Università di Pisa*, Pisa, *ISCED 5A*.
Specialized in Dynamics of Chaotical Systems and Climate Change
Final grade: 101/110

Fields of study High degree preparation covering:

- Classical Mechanics, Thermodynamics
- Classical Electrodynamics
- Mathematical Analysis and Calculus
- General Chemistry
- Nuclear and SubNuclear Physics, Quantum Mechanics

2012–2014 **M.Sc. Earth System Physics**, *Università di Bologna*, Bologna, *EQF 5*.
Specialized in Atmospheric Physics, Dynamical Meteorology and Numerical Weather Prediction.
Final grade: 110/110 cum laude

Fields of study Exams covered a wide field of topics including:

- Synoptic and Dynamic Meteorology
- Numerical integration of partial differential equation
- Atmospheric Physics, Radiative Transfer
- Cloud Microphysics
- Stratosphere and Troposphere Chemistry
- Physical Oceanography
- Planetary Boundary Layer and Turbulence

2014–present **PhD. International Max Planck Research School on Earth System Modelling**, *Max Planck Institute for Meteorology*, Hamburg.
Investigating the sign and magnitude of the soil-moisture precipitation feedback with Large Eddy Simulations

Max Planck Institute for Meteorology, Bundesstrasse 53 – Hamburg, Germany

☎ +49 152 37176914 • ☎ +49 40 41173 455

✉ guido.cioni@mpimet.mpg.de • 🌐 <http://guidocioni.altervista.org>

Member of the Clouds and Convection group and of the Hans Ertel Centre for Weather Research (collaboration between the MPI and DWD)

Bachelor of Science Thesis

Title *Chaotic Networks Synchronization with applications to Global Climate Changes*
Supervisors Leone Fronzoni
Description An analytical study of dynamical chaos has been proposed with applications to the study of global climate changes. Using a network of chaotic oscillators it has been shown that the synchronization events coincide with past climate shifts. - <http://guidocioni.altervista.org/appunti/tesi.pdf>

Master of Science Thesis

Title *Thermal structure and dynamical modelling of a Mediterranean Tropical-Like Cyclone*
Supervisors Andrea Buzzi, Piero Malguzzi
Description A detailed analysis of a Mediterranean Tropical-like cyclone (MTLC) occurred in January 2014 has been conducted. After having identified the cyclone path and its general features, the GLOBO, BOLAM and MOLOCH NWP models, developed at CNR-ISAC (Bologna), were used to simulate the phenomenon. Particular attention was paid to the Mediterranean phase of the system life cycle as well as to the Atlantic phase, since the cyclone showed a well defined precursor up to 3 days before the formation of the mean sea level pressure (MSLP) minimum over the Alboran Sea.

Conferences, summer-schools and seminars attended

February, 9-13 2015 **Probability and uncertainty: two concepts to be expanded in meteorology**, Bologna, Italy.
Anders Persson, Roberto Buizza, Federico Grazzini, Chiara Marsigli, Andrea Montani
February, 15-19 2016 **Understanding Clouds and Precipitation**, Berlin, Germany.
Christine Chiu, George Craig, Tristan L'Ecuyer, Richard Forbes, Wojtek Grabowski, Steve Klein, Louise Nuijens, Dave Randall, Evelyne Richard, Masaki Satoh, Steve Sherwood, Alison Stirling
May, 16-20 2016 **ECMWF Training course: Parametrization of subgrid physical processes**, ECMWF, Reading, UK.
June, 20-24 2016 **ISAC-CNR Summer School: Advances in severe weather analysis: models and observations**, Castro Marina, Lecce, Italy.

Publications

2016 **Cioni G, Buzzi A and Malguzzi P.**, *Thermal structure and dynamical precursor of a Mediterranean Tropical-like cyclone*, Q.J.R. Meteorol. Soc., 142: 1757-1766., doi:10.1002/qj.2773.
2017(in review) **Cioni G, Hohenegger C.**, *Effect of soil moisture on diurnal convection and precipitation in Large-Eddy Simulations*, Journal of Hydrometeorology.

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