Curriculum Vitae

CHIARA CAGNAZZO

Chiara Cagnazzo
ISAC-CNR
Via Fosso del Cavaliere 100 00133 - Roma

DEGREES

- PhD, Ecole Polytechnique, Paris, France. "Variabilité de la température dans la stratosphère". *Très honorable avec félicitations*. June 2004

- DEA (*Diplôme d'Etudes Approfondies*) in *Météorologie, Océanographie, Environment* (Paris VI University), October 2000.

- *Laurea* in Physics, University of Rome "La Sapienza", 110/110. October 1999. Aerosol measurement and their relevance for studying the stratopshere-troposphere exchange mechanism. Preparation of the MAS (Multiwavelenght Aerosol Scatterometer) instrument onboard the Geophysika aircraft, participation to the APE-THESEO measurement campaign (Mahé, Seychelles). Prof. Giorgio Fiocco (University of Rome, 'La Sapienza'), Dr. Alberto Adriani (IFA) e Dr. Francesco Cairo (IFA)

EMPLOYMENT

20 Dec 2011 – Present	Researcher at ISAC-CNR
January 2011 – Present	Scientist and Junior Sceintist at Centro Euro-Mediterraneo per i Cambiamenti Climatici (CMCC), Bologna, Italy.
February 2007 – January 2011	Junior Scientist at Centro Euro-Mediterraneo per i Cambiamenti Climatici (CMCC), Bologna, Italy.
Sept. 2008 – Nov. 2008 March 2009 – May 2009 April 2010 – June 2010 April 2011 – June 2011 April 2012 – June 2012	Responsible of the PhD course: Radation and Climate, International PhD on Science and Management of Climate Change, Ca' Foscari University, Venice.
February 2005 – January 2007	Postdoctoral Fellow at INGV (Istituto Nazionale di Geofisica e Vulcanologia) Bologna, Italia.
Sep2003 – March 2004	Research Fellow at ENEA (Ente per le Nuove tecnologie, l'Energia e l'Ambiente), in the Atmospheric Simulations group, *Progetto Speciale Clima Globale*.
March 2000 – August 2003	*Ingenieur de recherche* and PhD student at 'Laboratoire de Météorologie Dynamique du CNRS' (LMD, Ecole Polytechnique, Palaiseau, France

RESEARCH ACTIVITIES

Research Domain (keywords)

Climate variability and global changes, radiation and climate, atmospheric modeling, climate predictability, stratospheric composition and dynamics, evaluation of chemistry-climate models, troposphere-stratosphere exchange, satellite observations, aerosol in-situ observations

Significant Responsabilities

Since January 2011: Leader of the SPARC DynVAR Activity "Water Vapor" (Modeling the Dynamics and Variability of the Stratosphere-Troposphere System)

January 2011-January 2012: Co-Director of the international PhD programme PhD Programme in science and Management of Climate Change (Director: Carlo Barbante), Global Change Science and Policy (ChangeS).

2010-2011 Co-responsible for CMCC of the CMIP5 simulations (Coupled Model Intercomparison Project Phase 5) – WCRP (World Climate Research Program);

Co-author (lead authors: P. Forster, V. Fomichev) of Chapter 3 'Radiation' of the SPARC CCMVal Report – WCRP/UNEP (Stratospheric Processes and their Role in Climate , World Climate Research Program, Chemistry-Climate Model Validation, PIs: V. Eyring, T. G. Shepherd, D. Waugh, 2007-2010)

Co-author (lead authors: E. Manzini, K. Matthes) of Chapter 8 'Natural Variability of Stratospheric Ozone' of the SPARC CCMVal Report - WCRP/UNEP (Stratospheric Processes and their Role in Climate , World Climate Research Program, Chemistry-Climate Model Validation, PIs: V. Eyring, T. G. Shepherd, D. Waugh, 2007-2010)

2009-2013: WP-3 leader and PI for CMCC of the European Project COMBINE: "New components in Earth System modelling for better climate projections".

2010: Deputy member of the Management Committee of the European WAVACS, COST European Science Foundation ES0604 (WAter VApour in the Atmospheric Climate System).

Research Projects

2010-2013 PAPRIKA-Italia Ev-K2-CNR SHARE project, "CryosPheric responses to Anthropogenic PRessures in the HIndu Kush - Karakoram -HimalayA regions: impacts on water resources and Availability", Responsible for CMCC

2009-2013 European Project COMBINE: "New components in Earth System modelling for better climate projections"

2008: Italy-France coopretaion initiative GALILEO (Italian Foreign Minister, Ministère de l'Education Nationale), project: "Variabilité Solaire et Climat", in collaboration with Laboratoire de Meteorologie Dynamique.

2007-2009: Collaborator in the European Project CIRCE (Climate Change and Impact Research: the Mediterranean Environment)

2006-2009: Collaborator in the PNRA Project (Programma Nazionale Ricerche in Antartide), "CLImate Variability in the Anctartic Stratosphere".

2005-2006: Collaborator in the European Project SCOUT-O3: "Stratospheric ozone-climate interactions".

2000-2003: Collaborator in the European Project EuroSPICE "Stratospheric processes and their impact on climate and the environment", e SOLICE "SOLar Impacts on Climate and the Evironment" ENV-2-CT.

2002: Collaborator in the PNCA (Projet National de Chimie Atmosphérique): "Climate change and dynamical barriers in the atmosphere"

1998-1999: Collaborator in the APE-THESEO European Project in the Tropics (Airborne Platform for Environmental observation – Third European Stratospheric Experiment on Ozone).

TEACHING AND STUDENTS

a.a. 2012-2013, Course “Numerical Modeling” (FIS01), University of Rome Tor Vergata, 8 CFU

Responsible of the PhD course “Radiation and Climate” (30 hours), PhD in Science and Management of Climate Chnage, University of Venice Ca’ Foscari, years: 2007-2008(XXIII), 2008-2009(XXIV), 2009-2010(XXV), 2010-2011(XXVI), 2011-2012(XXVII)

a.a. 2005-2006, 3 hours Lecture University of Rome Tor Vergata, *Corso di Laurea in Fisica dell’Atmosfera e Meteorologia*, Course “Climatology”

2013: G Rea Supervisor “Tesi Specialistica Fisica”, University of Bologna, Student: Gloria Rea

2012-2013: Supervisor stage of Daniele Galuzzo, "Attivita’ di supporto alla ricerca nell'analisi e trattamento di database climatici provenienti da simulazioni di clima per lo studio della variabilita’ troposfera/stratosfera"

2013: Supervisor “Tesi triennale Fisica dell’Atmosfera e Meteorologia”, University of Rome Tor Vergata, Student: Daniele Minganti, Title:”Impatto della dinamica stratosferica sulla variabilita’ dell’ozono totale: analisis di un insieme di modelli globali di clima e chimica”

2010-2013, Tutor of the PhD Student Paolo Davini, XXV PhD Cycle, Science and Management of Climate Change, Global Change Science and Policy (ChangeS), Universita’ Ca’ Foscari, Venezia
(now co-tutor of Paolo Davini “Assegno di Ricerca” at ISAC-CNR Torino)

2011- present, Co-Tutor of the PhD Student Miriam D’Errico, XXVII XXV PhD Cycle, Science and Management of Climate Change, Global Change Science and Policy (ChangeS), Universita’ Ca’ Foscari, Venezia

2011-2012, Co-Tutor of the PhD Student Claudine Wenhaji Ndomeni, XXVI PhD Cycle, Science and Management of Climate Change, Global Change Science and Policy (ChangeS), Universita’ Ca’ Foscari, Venezia

December 2010: Member of the Reading Committee for the PhD of Giuseppe Zappa, XXIII PhD Cycle, Science and Management of Climate Change, Global Change Science and Policy (ChangeS), Universita’ Ca’ Foscari, Venezia. Title: "Tropical extratropical interaction and systematic errors of climate models", Tutor: A. Navarra; Co-Tutor: V. Lucarini.

Otober 2012, “Membre du jury de these de doctorat Universite Toulouse”, Clio Michel, Rôle du déferlement des ondes de Rossby dans la variabilité climatique aux latitudes tempérées, Ecole Doctorale Sciences de l'Univers, de l'Environnement et de l'Espace (SDU2E)

November 2012, “Membre du jury de these de doctorat Universite Toulouse”, Gaelle Ouzeau, Influence de la stratosphère sur la variabilité et la prévisibilité climatique hivernale dans l’Hémisphère Nord, Ecole Doctorale Sciences de l'Univers, de l'Environnement et de l'Espace (SDU2E)

REVIEWER FOR

Annales Geophysicae, Journal of Climate, Tellus, Atmospheric Chemistry and Physics, Journal of Geophysical Research, SPARC/WCRP Assessment of Chemistry Climate Models

INVITED CONFERENCES AND CHAIRMAN

Cagnazzo C. and coauthors, Invited talk at SPARC DynVar 3rd Workshop, Water Vapor variations in the Upper Troposphere and Lower Stratosphere in CMIP5 simulations – University of Reading 22-24 April 2013

Cagnazzo C., and co-authors, Invited talk at IAMAS Joint Symposium: "J-M04 Stratosphere-Troposphere-Ocean coupling in weather and climate" of the XXV IUGG 2011 General Assembly "Earth on the Edge: Science for a Sustainable Planet", 28 June - 7 July 2011, Melbourne, Australia

E. Manzini, **C. Cagnazzo**, P.G. Fogli, M. Giorgetta, L. Tommasini, "Low frequency variability in the stratosphere", Invited talk at IAMAS Symposium M04 on "Recent advances in middle atmosphere science" of the XXV IUGG 2011 General Assembly "Earth on the Edge: Science for a Sustainable Planet", 28 June - 7 July 2011, Melbourne, Australia

Cagnazzo C., and co-authors: Status and Plans of CMIP5 runs with High Top Models: CMCC, IPSL, MPI, Invited talk at DynVar Workshop 2, November 2010, Boulder, Colorado.

Cagnazzo C., Invited Presentation "Modelli di clima e proiezioni climatiche future", CIRGIS Congresso Internazionale, Trento October 2010.

Cagnazzo C., and co-authors, Evaluation of Chemistry-Climate models: Temperature and Ozone responses to the El-Nino Southern Oscillation, invited talk at "Atmospheric Composition Changes: Climate-Chemistry Interactions" – Lecce, 2-4 November 2009.

Cagnazzo C., Manzini E and P. G. Fogli, Role of the Sea Surface Temperature Variability in the Simulation of the Quasi Biennial Oscillation in an Atmosphere-Ocean Coupled Model , invited talk at MOCA-IAMAS Joint Assembly, Montreal, July 2009. Symposium M05, "Stratosphere-Troposphere-Ocean Coupling in Climate -Top Down or Bottom Up?"

Manzini E., **Cagnazzo C**. and P. G. Fogli, Recent climate change and stratospheric variability: Results from an ensemble of simulations for the last 50 years, invited talk at MOCA-IAMAS Joint Assembly, Montreal, July 2009. Symposium M01, " Middle Atmosphere Science"

Cagnazzo C., C. Claud, A. Hauchecorne, P. Keckhut, J. Austin and S. Hare, Temperature variability in the stratosphere and links with ozone change, Invited talk, European Geophysical Union, Nice, April 2003.

Cagnazzo C. , Claud C. , Hauchecorne A., Keckhut P., and Langematz U., Temperature trends in the lower and middle stratosphere, Invited talk at the "HERAEUS" Temperature trends workshop, Germany, Kühlungsborn, May 2002

Chairman, international workshop SCOUT-O3 final meeting, 15-17 June 2009, Schliersee, Germania.

ORGANIZATION OF CONFERENCES AND SCHOOLS

Co-organization of COST-WAVACS winter school (Atmospheric Water Vapour in the Climate System), February 2011, San Servolo, Venice.

Stratospheric Processes and their Role in Climate 4th General Assembly, Bologna, September 2008. Membro del "Local Organizing Committee". [also on SPARC newsletter 32, January 2009]

LANGUAGES

Italian (native language), French and English (fluent)

PUBLICATIONS

International Assessment peer reviewed

V. I. Fomichev, P. M. de F. Forster, **C. Cagnazzo**, A. I. Jonsson, U. Langematz, E. Rozanov, V. Falaleeva, B. Fomin, N. Gillett, M. Iacono, A. Karpechko, J. Li, B. Mayer, E. Mlawer, O. Morgenstern, SPARC CCMVal, SPARC CCMVal Report on the Evaluation of Chemistry-Climate Models, V. Eyring, T. G. Shepherd, D. W. Waugh (Eds.), SPARC Report No. 5, WCRP-X, WMO/TD-No. X, http://www.atmosp.physics.utoronto.ca/SPARC, 2010.

E. Manzini, K. Matthes**,** C. Blume, G. Bodeker, **C. Cagnazzo**, N. Calvo, A. Charlton- Perrez, A. Douglass, P. G. Fogli, L. Gray, J. Kim, K. Kodera, M. Kunze, C. Pena Ortiz, B. Randel, T. Reichler, G. Stenchikov, C. Timmreck, M. Toohey, and S. Yoden, SPARC CCMVal, SPARC CCMVal Report on the Evaluation of Chemistry-Climate Models, V. Eyring, T. G. Shepherd, D. W. Waugh (Eds.), SPARC Report No. 5, WCRP-X, WMO/TD-No. X, http://www.atmosp.physics.utoronto.ca/SPARC, 2010.

Submitted

D'Errico M., **Cagnazzo C.** and P. G. Fogli, W Lau, J von Hardenberg, F. Fierli, Asian Monsoon and the Elevated-Heat-Pump Mechanism in Coupled Aerosol-Climate Model Simulations, submitted to JGR, July 2013

Margaret Hurwitz, Natalia Calvo Fernandez , Chaim Garfinkel , Amy Butler , Sarah Ineson , Chiara Cagnazzo , Elisa Manzini , Cristina Peña-Ortiz, Extra-Tropical Atmospheric Response to ENSO in the CMIP5 Models, submitted to JGR, July 2013

Bucci, S., Cagnazzo, C., Cairo, F., Di Liberto, L., and Fierli, F.: Aerosol variability and atmospheric transport in the Himalayan region from CALIOP 2007–2010 observations, Atmos. Chem. Phys. Discuss., 13, 15271-15299, doi:10.5194/acpd-13-15271-2013, 2013.

Peer reviewed

Cagnazzo, C., E. Manzini, P.G. Fogli, M. Vichi, P. Davini (2013) Role of stratospheric dynamics in the ozone–carbon connection in the Southern Hemisphere. Climate Dynamics. doi:10.1007/s00382-013-1745-5

Paolo Davini, **Chiara Cagnazzo**, Pier Giuseppe Fogli, Elisa Manzini, Silvio Gualdi, Antonio Navarra, European blocking and Atlantic jet stream variability in the NCEP/NCAR reanalysis and the CMCC-CMS climate model, Climate Dynamics, July 2013.

Emanuel, Kerry, Susan Solomon, Doris Folini, Sean Davis, **Chiara Cagnazzo**, 2013: Influence of Tropical Tropopause Layer Cooling on Atlantic Hurricane Activity. J. Climate, 26, 2288–2301. doi: http://dx.doi.org/10.1175/JCLI-D-12-00242.1

Anstey, J. A., P. Davini, L. J. Gray, T. J. Woollings, N. Butchart, **C. Cagnazzo**, B. Christiansen, S. C. Hardiman, S. M. Osprey, and S. Yang (2013), Multi-model analysis of Northern Hemisphere winter blocking: Model biases and the role of resolution, J. Geophys. Res. Atmos., 118, 3956–3971, doi:10.1002/jgrd.50231.

Tomassini, L., O. Geoffroy, J.-L. Dufresne, A. Idelkadi, **C. Cagnazzo**, K. Block, T. Mauritsen, M. Giorgetta, J. Quaas (2013) The respective roles of surface temperature driven feedbacks and tropospheric adjustment to CO2 in CMIP5 transient climate simulations. Climate Dynamics. doi:10.1007/s00382-013-1682-3

Davini, Paolo, **Chiara Cagnazzo**, Silvio Gualdi, Antonio Navarra, 2012: Bidimensional Diagnostics, Variability, and Trends of Northern Hemisphere Blocking. J. Climate, 25, 6496–6509. doi: http://dx.doi.org/10.1175/JCLI-D-12-00032.1

Davini, P., **C. Cagnazzo**, R. Neale, and J. Tribbia (2012), Coupling between Greenland blocking and the North Atlantic Oscillation pattern, Geophys. Res. Lett., doi:10.1029/2012GL052315, in press.

Bellucci, A., S. Gualdi, S. Masina, A. Storto and E. Scoccimarro, **C. Cagnazzo**, P. Fogli, E. Manzini, A. Navarra (2012) Decadal climate predictions with a coupled OAGCM initialized with oceanic reanalyses. Climate. Dynamics. doi: 10.1007/s00382-012-1468-z

Weare, B. C., C. Cagnazzo, P. G. Fogli, E. Manzini, and A. Navarra (2012), Madden-Julian Oscillation in a climate model with a well-resolved stratosphere, J. Geophys. Res., 117, D01103, doi:10.1029/2011JD016247.

Manzini, E., **C. Cagnazzo**, P. G. Fogli, A. Bellucci, W. Müller (2011) Stratosphere - Troposphere coupling at inter-decadal time scales: Implications for the North Atlantic Ocean. Geophys. Res. Lett. 39, L05801, doi:10.1029/2011GL050771

Forster, P. M., et al., V. I. Fomichev, E. Rozanov, **C. Cagnazzo**, A. I. Jonsson, U. Langematz, B. Fomin, M. Iacono , B. Mayer , E. Mlawer, G. Myhre, R. Portmann, H. Akiyoshi, V. Falaleeva, N. Gillett, A. Karpechko, J. Li, P. Lemennais, O. Morgenstern, S. Oberländer, M. Sigmond, K. Shibata, Evaluation of radiation scheme performance within chemistry climate models, J. Geophys. Res.,116, D10302, doi:10.1029/2010JD015361, 2011.

F. Fierli, E. Orlandi, K.S. Law, **C. Cagnazzo**, F. Cairo, S. Borrmann, G. Di Donfrancesco, C. Schiller, F. Ravegnani, and M. Volk, Impact of deep convection in the tropical tropopause layer in West Africa: in-situ observations and mesoscale modeling, Atmos. Chem. Phys., 11, 201-214, 2011. doi:10.5194/acp-11-201-2011

C. Cagnazzo, E. Manzini, N. Calvo, A. Douglass, H. Akiyoshi, S. Bekki, M. Chipperfield, M. Dameris, M. Deushi, A. M. Fischer, H. Garny, A. Gettelman, M. A. Giorgetta, D. Plummer, E. Rozanov, T. G. Shepherd, K. Shibata, A. Stenke, H. Struthers, and W. Tian, Northern winter stratospheric temperature and ozone responses to ENSO inferred from an ensemble of Chemistry Climate Models, Atmos. Chem. Phys., 9, 8935-8948, 2009

Palazzi, E., Fierli, F., Cairo, F., **Cagnazzo, C**., Di Donfrancesco, G., Manzini, E., Ravegnani, F., Schiller, C., D'Amato, F., and Volk, C. M.: Diagnostics of the Tropical Tropopause Layer from in-situ observations and CCM data, Atmos. Chem. Phys., 9, 9349-9367, 2009.

Cagnazzo, C. and E., Manzini, Impact of the stratosphere on the winter tropospheric teleconnections between ENSO and the North Atlantic and European Region, J. Climate, 22, 5,1223–1238. DOI: 10.1175/2008JCLI2549.1, 2009.

Cairo, F., Buontempo, C., MacKenzie, A. R., Schiller, C., Volk, C. M., Adriani, A., Mitev, V., Matthey, R., Di Donfrancesco, G., Oulanovsky, A., Ravegnani, F., Yushkov, V., Snels, M., **Cagnazzo, C.**, and Stefanutti, L.: Morphology of the tropopause layer and lower stratosphere above a tropical cyclone: A case study on cyclone Davina (1999), Atmos. Chem. Phys., 8, 3411-3426, 2008

Claud, C., **C. Cagnazzo** and P. Keckhut, The Effect of the 11-year Solar-Cycle on the Temperature in the Lower Stratosphere, Journal of Atmospheric and Solar-Terrestrial Physics, Volume 70, Issue 16, Pages 2031-2040, doi:10.1016/j.jastp.2008.07.010. , 2008

Cagnazzo C., Manzini, E., Giorgetta, M. A., Forster, P. M. De F., and Morcrette, J. J.: Impact of an improved shortwave radiation scheme in the MAECHAM5 General Circulation Model, Atmos. Chem. Phys., 7, 2503-2515, 2007.

Cagnazzo C., Claud C., and Hare S, Aspects of stratospheric long-term changes induced by ozone depletion, Climate Dynamics, DOI10.1007/s00382-006-0120-1. , 2006.

Keckhut P., **C. Cagnazzo**, M.-L. Chanin, C. Claud, and A. Hauchecorne, The11-yr solar-cycle effects on the temperature in the upper-stratosphere and mesosphere.Part I: Assessment of observations. J. Atmos. Sol.-Terr. Phys., 67, 940-947, 2005

Other referred publications

Austin. J., Butchart N., Claud C., **Cagnazzo C**., Hauchecorne A., Hampson J., Kaurola J., Damski J., Tholix L., Langematz L., Mieth P., Nissen K., Grenfell L.,Lahoz W., Hare S., and Canziani P., EuroSPICE: The European Project on Stratospheric Processes and their influence on Climate and the Environment. Description and brief highlights, SPARC Newsletter (Stratospheric Processes and their Role in Climate), July 2003

ORAL AND POSTER PRESENTATION TO MORE THAN 20 INTERNATIONAL CONFERENCES