

CURRICULUM VITAE ET STUDIORUM

Andrea Cucco

Personal data

- Date & place of birth: Venice (IT), 10 December 1975.
- Home address: Dorsoduro 3271, Venice (IT).
- Work address: IAMC-CNR, IMC Località Sa Mardini, 09072, Oristano (IT).
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Education

- December 2005: PhD in Environmental Science at the University of Ca' Foscari in Venice, (IT).
- April 2001: degree in Environmental Science from Ca' Foscari University in Venice (IT).
- July 1994: diploma from the "F. Severi" Scientific High School, (IT).

Employment

- January 2008 – today: tenured researcher at the Institute of Coastal Marine Environment (IAMC-CNR), in Oristano (IT), working on the development of environmental numerical models based on the finite element method.
- April 2004 - January 2008: under contract as researcher at the Institute of Coastal Marine Environment (IAMC-CNR), in Oristano (IT), working on the development of finite element models of water circulation, wind-wave propagation and sediment transport in coastal areas.
- 2005-2006: professor at the University of La Tuscia, faculty of Environmental Science, holding the academic course of “physical-biological mathematical models”.
- April 2001 - April 2004: research fellow at the Institute of Marine Science (ISMAR-CNR) in Venice (IT), working on: development of a finite element hydrodynamic model of the Venice Lagoon and the Adriatic Sea, operational modelling of storm surge events (high tide) in the Adriatic Sea and Venice Lagoon with finite element hydrodynamic models, modelling the erosive processes that occurs along the North Adriatic Sea coast-line.

Knowledge of languages

- Good knowledge of spoken and written English.

Professional skills

- Knowledge of numerical modeling techniques applied to geophysical processes.
- Knowledge of mathematical methods applied to numerical modeling.
- Knowledge of statistical methods applied to environmental data analysis.
- Knowledge of the Windows and Linux operative systems.
- Knowledge of the bash shell system.
- Knowledge of the Fortran 77 and Fortran 90 programming languages.
- Knowledge of the Matlab programming language.
- Knowledge of the OpenDX Data Explorer Visualization program (an open source scientific data graphical visualization tool).

Awards

- December 2002: winner of the Ludovico Caldesi Valeri award, "Premio di Laurea Ludovico Caldesi Valeri".

Participation in Research projects as Senior Personnel (selected)

- Research project funded by EU (FP7) VECTORS. 2011-2014.
- Research project funded by RAS (local regional authority). 2010-2012.
- Research project funded by the Italian Ministry of Environment, SOS Bonifacio Project which aim is to develop an operational system based on numerical models to predict the fate of pollutant in the coastal sea areas of the Bonifacio Strait. (2009-2011)
- Research project funded by the Italian Ministry of University and Research, SIGLA Project, which aim is the develop of an integrated system to monitor and manage the lagoon and coastal areas of the Oristano Gulf. (2007-2008).
- Research project funded by SARAS Agency, Research and Technologies S.p.a. – SARTEC S:p.a. (www.sartec.it) which aim is the develop of a numerical model to investigate the hydrodlogy and ecology dynamics of Cagliari Gulf (Sardinia, Italy). (2007)

- Research project funded by the Italian Agency for the Protection of Environment and Territory (APAT), which aim is the analysis of the interaction between land and sea in the coastal sea areas of the Pescara river by means of hydrodynamic numerical models ” (2006)
- Research project funded by the Italian Ministry of University and Research, REMA Project. (2004)
- Research project funded by the Venice Municipality which aim is the develop and set-up of an operational model for the prediction of the high tide events in the Lagoon of Venice and Adriatic Sea. (2001-2003).

Other professional experiences

- March- April 2006: participates to an oceanographic campaign in the Mditerranean Sea (Medgoos n 12).
- May – June 2005: participates to an oceanographic campaign in the Mditerranean Sea (Medgoos n 10).
- March 2004: co-author of a technical map for the classification of the coastal areas subjected to potential erosive processes in the Northern Adriatic Sea (funded by the Autorità di Bacino dei fiumi Livenza, Tagliamento Piave, Brenta-Bacchiglione).
- June 2003: participates to an oceanographic campaign in the Venice Lagoon and in the Adriatic Sea, to collect current velocity data by means of Acoustic Doppler Current Profiler probe (funded by THETIS SPA. Society, Venice).
- 2001-2003: implements and sets up an operational forecasting system for the sea level in Venice in collaboration with the Venice Municipality.
- 2001-present: is involved in the CORILA Research Programme for 2000-2004, in the role of man-leader of the Work-Package 3.1 in the Framework of the CORILA project 3.5, funded by the Consorzio per la Gestione del Centro di Coordinamento per le Attività di Ricerca inerenti il Sistema Lagunare di Venezia CORILA .
- 2002-present: collaborates on the TAGUBAR Project: Environmental recovery project of the Guanabara Bay (Brasil, Rio de Janeiro).

Courses

- July 2004: participates to the course entitled: “Summer School and Workshop on Oceanography Lakes and Rivers” at the CIM of Lisbon
- February 2004: participates to the course entitled: An Introduction to Computational Fluid Dynamics at the von Karman Institute for Fluid Dynamic, Rhode-San-Genése (Be).

- September 2003: participates to the course entitled: “Geophysical and Environmental Fluid Dynamic Summer School” (GEFD), Cambridge (UK).
- June 2002: participates to an intensive course on the subject: "The Steady Circulation of the Oceans" by Prof. Paola Malanotte Rizzoli. CNR-MIT Coop. on Climate Change of Mediterranean Area, Perugia (IT).

Refereed articles in international journals

- C Ferrarin, A Bergamasco, G Umgiesser, A Cucco. 2013. Hydrodynamics and spatial zonation of the Capo Peloro coastal system (Sicily) through 3-D numerical modelling. *Journal of Marine Systems*. 117-118, 96-97.
- Christian Ferrarin, Aron Roland, Marco Bajo, Georg Umgiesser, Andrea Cucco, Silvio Davolio, Andrea Buzzi, Piero Malguzzi, Oxana Drofa. 2013. Tide-surge-wave modelling and forecasting in the Mediterranean Sea with focus on the Italian coast. *Ocean Modelling*. 61,38-48.
- S Coppa, GA de Lucia, P Magni, P Domenici, F Antognarelli, A Satta, A Cucco. 2013. The effect of hydrodynamics on shell orientation and population density of *Pinna nobilis* in the Gulf of Oristano (Sardinia, Italy). *Journal of Sea Research*.76, 201–210.
- DM Canu, C Solidoro, G Umgiesser, A Cucco, C Ferrarin. 2012. Assessing confinement in coastal lagoons. *Marine Pollution Bulletin*. 64, 11, 2391–2398.
- A Olita, S Dobricic, A Ribotti, L Fazioli, A Cucco, C Dufau, R Sorgente. 2012. Impact of SLA assimilation in the Sicily Channel Regional Model: model skills and mesoscale features. *Ocean Science* 8 (4), 485-496.
- A Cucco, A Ribotti, A Olita, L Fazioli, B Sorgente, M Sinerchia, A Satta, A. 2012. Support to oil spill emergencies in the Bonifacio Strait, western Mediterranean. *Ocean Science* 8 (4), 443-4547.
- A Cucco, M Sinerchia, C Lefrancois, P Magni, M Ghezzi, G Umgiesser. 2012. A metabolic scope based model of fish response to environmental changes. *Ecological Modelling* 237, 132-141.
- A Cucco, M Sinerchia, A Ribotti, A Olita, L Fazioli, A Perilli, B Sorgente. 2012. A high-resolution real-time forecasting system for predicting the fate of oil spills in the Strait of Bonifacio (western Mediterranean Sea). *Marine Pollution Bulletin* 64 (6), 1186-1200
- B Sorgente, R Sorgente, A Olita, L Fazioli, A Cucco, A Perilli, M Sinerchia. 2012. Effects of protection rules and measures in an important international strait area: the Bonifacio Strait. *Journal of Operational Oceanography* 5 (1), 35-44
- Christian Jørgensen, Myron A Peck, Fabio Antognarelli, Ernesto Azzurro, Michael T Burrows, William WL Cheung, Andrea Cucco, Rebecca E Holt, Klaus B Huebert, Stefano Marras, David McKenzie, Julian Metcalfe, Angel Perez-Ruzafa, Matteo Sinerchia, John Fleng Steffensen, Lorna R Teal, Paolo Domenici. 2012.

Conservation physiology of marine fishes: advancing the predictive capacity of models. *Biology letters*. *Biology letters* 8 (6), 900-903.

Antonio Olita, Andrea Cucco, Simone Simeone, Alberto Ribotti, Leopoldo Fazioli, Barbara Sorgente, Roberto Sorgente. 2012. [Oil spill hazard and risk assessment for the shorelines of a Mediterranean coastal archipelago](#). *Ocean and coastal management*. Vol.57. 44-52

- Giovanni De Falco, Sandro De Muro, Tiziana Batzellab and Andrea Cucco. 2011. Carbonate sedimentation and hydrodynamic pattern on a modern temperate shelf: The strait of Bonifacio (western Mediterranean). *Estuarine, Coastal and Shelf Science*. 93, (1), 14-26
- Gattacceca, Julie C.; Mayer, Adriano; Cucco, Andrea; Claude, Christelle; Radakovitch, Olivier. 2011. Submarine groundwater discharge in a subsiding coastal lowland: A 226Ra and 222Rn investigation in the Southern Venice lagoon. *Applied Geochemistry* Volume: 26, Issue: 5, pp. 907-920
- Michol Ghezzi, Stefano Guerzoni, Andrea Cucco, Georg Umgiesser,. 2010. Changes in Venice Lagoon dynamics due to construction of mobile barriers, *Coastal Engineering*. Volume: 193, Issue: 1-2, pp. 34-51.
- Christian Ferrarin, Andrea Cucco, Georg Umgiesser, Debora Bellafiorea, Carl L. Amos. 2010. Modelling fluxes of water and sediment between the Venice Lagoon and the sea. *Continental Shelf Research*. 30 (8), 904-914.
- A. Roland, A. Cucco, C. Ferrarin, T.W. Hsu, J.M. Liao, G. Umgiesser and U. Zanke. 2009. On the development and verification of a 2-d coupled wave-current model on unstructured meshes. *Journal of Marine Systems*. 78, 922-938.
- A. Cucco, Georg Umgiesser, Cristian Ferrarin, Angelo Perilli, Donata Melaku Canu, Cosimo Solidoro. 2009. Eulerian & Lagrangian transport time scales of a tidal active coastal basin. *Ecological Modelling*. 220, 7, 913-922
- Molinaroli, E., Guerzoni, S., Sarretta, A., Cucco, A. et al., 2009. Relationships between hydrodynamic parameters and grain size in two contrasting transitional environments: The Lagoons of Venice and Cabras, Italy. *Sedimentary Geology*. 219,1,4,196-207
- P. Magni, S. Como, A. Cucco, G. De Falco, P. Domenici, M. Ghezzi, C. Lefrancois, S. Simeone, A. Perilli. 2008. A Multidisciplinary and Ecosystemic Approach in the Oristano Lagoon-Gulf System (Sardinia, Italy) as a Tool in Management Plans. *Transitional Water Bulletin*. 41-62
- Giovanni De Falco; Maura Baroli; Andrea Cucco; Simone Simeone. 2008. Intrabasinal conditions promoting the development of a biogenic carbonate sedimentary facies associated with the seagrass *Posidonia oceanica*. *Continental Shelf Research*, 28, 6, 797-812.
- D. Bellafiore, G. Umgiesser, A. Cucco. 2008. Modeling the water exchanges between the Venice Lagoon and the Adriatic Sea. *Ocean Dynamics* , 58, 5, 397-413

- C. Ferrarin; G. Umgiesser; A. Cucco; T.W. Hsu; A. Roland; C. L. Amos. 2008. Development and validation of a finite element morphological model for shallow water basins. *Coastal Engineering*. 55, 716-731
- M. Bajo , L. Zampato, L., Umgiesser, G., Cucco, A., Canestrelli, P. 2008. A finite element operational model for the storm surge prediction in Venice. *Estuarine, Coastal and Shelf Science*. 75, 236-249
- Molinaroli, E., Guerzoni, S., Sarretta, A., Cucco, A., Umgiesser, G., 2007. Links between hydrology and sedimentology in the Lagoon of Venice, Italy, Italy. *Journal of Marine Systems*. 28, 3-4. 303-317.
- Cucco, A. & Umgiesser, G., 2006. Modeling the Venice Lagoon Residence Time. *Ecological Modelling*, 193, 1-2, 5, 34-51.
- Cucco, A., Perilli, A., de Falco, G. & Umgiesser, G., 2006. A Finite Element Model for the Gulf of Oristano. *Chemistry & Ecology*, 22, 1, 307-331.
- Umgiesser, G., Melaku Canu, D., Cucco, A. & Solidoro, C., 2004. A finite element model for the Venice Lagoon. Development, set up, calibration and validation. *Journal of Marine Systems*, 51 123-145.
- Solidoro, C., Melaku Canu, D., Cucco, A. & Umgiesser, G., 2004. A partition of the lagoon of Venice based on physical properties and analysis of the general circulation. *Journal of Marine Systems*, 51 147-160.
- F. Braga, L. Alberotanza, A. Cucco, M. Ferla, A. Rusconi, M. Sclavo, G. Umgiesser, L. Zaggia, A. Zuliani, 2004. Morphology Of The Veneto Coast. In *Modern Modern and Ancient Fluvial, Deltaic and Marine Environments and Processes*, GEO-ECO-MARINA 9-10.